



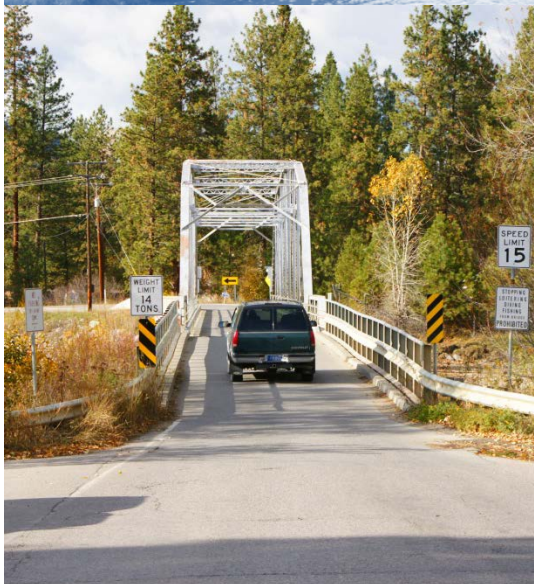
FINAL REPORT

Maclay Bridge Planning Study

Prepared for:
Missoula County
Missoula, Montana



Montana Department of Transportation
Helena, Montana



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- Comments Received Before Publication of the Draft Planning Study Report (released January 30, 2013)
 - Comments received before January 30, 2013*
- Informational Meeting No. 1 (April 24, 2012)
 - Press Release Announcing Informational Meeting*
 - Newspaper Advertisement*
 - Sign-In Sheets*
 - Welcome and Display Boards*
 - Presentation*
 - Summary of Meeting Notes*
- Informational Meeting No. 2 (July 12, 2012)
 - Press Release Announcing Informational Meeting*
 - Newspaper Advertisement*
 - Sign-In Sheets*
 - Welcome and Display Boards*
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- Resource Agency Workshop (May 21, 2012)
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- Newsletter Issue 3 (January 2013)

Appendix 2: Environmental Scan Report (on CD)

Appendix 3: Planning Study Documentation (on CD)

- Community and Agency Participation Plan
- Existing and Projected Conditions Report
- Needs and Objectives
- Improvement Options Memorandum
- Screening Assessment Memorandum
- Planning Level Cost Estimates

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ABBREVIATIONS / ACRONYMS

AASHTO	American Association of State Highway Transportation Officials
ADT	Average Daily Traffic
AADT	Average Annual Daily Traffic
AAGR	Average Annual Growth Rate
APE	Area of Potential Effect
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
CLOMR	Conditional Letter of Map Revision
CRABS	Cultural Resources Annotated Bibliography Search
CRIS	Cultural Resources Information System
DHV	Design Hourly Vehicle
DNRC	Department of Natural Resources and Conservation (Montana)
DOI	Department of Interior (United States)
EA	Environmental Assessment
ESA	Endangered Species Act
FAS	Fishing Access Site
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FIS	Flood Insurance Study
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GIS	Geographic Information System
LOMR	Letter of Map Revision
LRTP	Long Range Transportation Plan
LUST	Leaking Underground Storage Tank
LWCF	Land and Water Conservation Funds
MAAQS	Montana Ambient Air Quality Standards
MATP	Missoula Active Transportation Plan
MDEQ	Montana Department of Environmental Quality
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
MFWP	Montana Department of Fish, Wildlife, and Parks
MNHP	Montana Natural Heritage Program

mph	Miles per Hour
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
mton	Metric Ton
MUTD	Missoula Urban Transportation District
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NPL	National Priority List
NPS	National Park Service
NRCS	Natural Resource Conservation Service (United States Department of Agriculture)
NRHP	National Register of Historic Places
NRIS	Natural Resource Information System (State of Montana)
OPG	Office of Planning and Grants (Missoula County)
PM	Particulate Matter
RDM	Road Design Manual
TDM	Travel Demand Model
TDP	Transit Development Plan
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TPCC	Transportation Policy Coordinating Committee
USACOE	U.S. Army Corps of Engineers
UFDA	Urban Fringe Development Area
UPN	Uniform Project Number
UPWP	Unified Planning Work Program
URSA	Urban Service Area
USACOE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service
UST	Underground Storage Tank
vpd	Vehicles per Day
Section 4(f)	Section 4(f) of the 1966 Department of Transportation Act
Section 6(f)	Section 6(f) of the National Land and Water Conservation Funds Act

EXECUTIVE SUMMARY

The *Maclay Bridge Planning Study* was initiated at the request of the Missoula County Commissioners. The replacement of the Maclay Bridge with a new bridge has been considered as far back as 1994, when an Environmental Assessment (EA) for the *Maclay Bridge Site Selection Study* was completed. The results of the study identified a new bridge located at the extension of South Avenue as the Preferred Alternative. A Finding of No Significant Impact (FONSI) on the 1994 EA was never issued by the Federal Highway Administration (FHWA) and the Preferred Alternative from the EA was not advanced at the request of Missoula County. Missoula County had intended to use special project demonstration funds from Congress to implement the project but was unsuccessful in obtaining the funding. The Maclay Bridge replacement project was inactive until the County nominated it to receive funding from MDT's Off-System Bridge Program in 2002.

Since 2002, the Maclay Bridge replacement has steadily risen in priority for MDT's Off-System Bridge Program funds both for Missoula County and the Montana Department of Transportation's (MDT) Missoula District. In 2010, Missoula County was notified by MDT that the project development process could commence, and in August of that year, Missoula County and MDT personnel conducted a preliminary field review for the subject bridge at the new South Avenue location.

Missoula County decided to delay the project, and asked MDT for funding and technical assistance to undertake a high-level planning effort known as a pre-National Environmental Policy Act (NEPA)/Montana Environmental Policy Act (MEPA) planning study to allow for additional public involvement. The pre-NEPA/MEPA planning study allows for earlier planning-level coordination with community members, stakeholders, environmental resource agencies, and other interested parties – outside of the typical project development process.

The pre-NEPA/MEPA planning study is not a design or construction project; nor is it a decision document. The planning study identifies reasonable options to address safety, geometric and environmental concerns based on needs to increase safety and efficiency for the traveling public. The *Maclay Bridge Planning Study* ensured a proactive public involvement process that provided numerous opportunities for the public to be engaged in all phases of the planning study.

In order to narrow the set of options or strategies with the greatest capacity to address identified areas of concern, a screening process was used that correlated very closely with the needs and objectives of the study. Through this process the South 1 Alignment option (3E.1) best met the needs identified for the transportation system within the vicinity of the Maclay Bridge. Ultimately, it is the discretion of the Missoula County Commission to select an option that they are most comfortable with and that balances the transportation needs of the greater community.

The results of the study may be used to determine the level and scope of environmental review required if a project is forwarded into a subsequent NEPA/MEPA process by Missoula County.

ES.1 EXISTING AND PROJECTED CONDITIONS

Areas of concern and other considerations within the vicinity of the Maclay Bridge were identified through review of available reports, field observations, public databases, and other resources. They are summarized below:

TRANSPORTATION SYSTEM CONSIDERATIONS

- **Traffic** - Existing and projected traffic volumes exceed the AASHTO standard for a single-lane bridge (traffic volume < 100 vehicles per day).
- **Safety** - A number of crash trends and areas of concern exist within the vicinity of the Maclay Bridge. In particular, there were seventeen reported crashes at the intersection of River Pines Drive and Riverside Drive (on the west side of the bridge) and six reported crashes on the east side where North Avenue intersects the bridge.
- **Travel Time** - Without the existing Maclay Bridge in service, travel times to areas on the west side of the Bitterroot River are longer for private vehicles and emergency service responders.
- **Horizontal Alignment** - Three horizontal curves do not meet current Missoula County or MDT standards. Two of the sub-standard horizontal curves lead into and out of each side of the existing bridge.
- **Clear Zones** - Numerous locations have features within the horizontal clear zone and are unprotected. Southwest of the existing bridge the roadway fill slope is between two- and four-feet from the edge of the travel lane. In addition, trees and utility poles are in the area. The roadway fill slope is steep and lined with riprap.
- **Bridge**
 - The existing bridge is “functionally obsolete” due to the approach geometry on both ends of the bridge, and the narrow single-lane bridge width.
 - The single-lane bridge width of 14 feet does not meet current AASHTO, Missoula County or MDT standards for width given existing and projected traffic volumes.
 - The existing bridge is “load restricted” due to its original design, which now prevents some heavy vehicles from crossing. It also places limitations on how some vehicles cross the structure.
 - The Maclay Bridge is fracture critical, indicating if one part of the truss should fail, the entire bridge span may fail. With proper inspection and maintenance, the bridge is considered safe.
 - There are no bicycle or pedestrian features on the bridge.
 - The bridge is a composite of varying ages and types of load-bearing steel used throughout the structure.
 - Channel scour was not part of the original design in the 1940’s, and the existing bridge piers are located in the river channel on unknown materials.
- **Parking** - Parking concerns are evident based on numerous resolutions passed by the Missoula County Commission and numerous “911 calls” to the area.
- **Approaches**
 - Roadway widths on River Pines Road do not incorporate shoulders.
 - Bicycle and pedestrian facilities are absent on River Pines Road.

ENVIRONMENTAL CONSIDERATIONS

Numerous environmental considerations were noted. Prime farmland, water resources, wetlands, floodplains (and floodway), hazardous substances, air quality, fish and wildlife, vegetation, and cultural and archaeological resources are located within the vicinity of the Maclay Bridge.

OTHER CONSIDERATIONS

The following other considerations were noted through analysis and public comments:

- Travel speeds on North Avenue, River Pines Road and South Avenue.
- Traffic growth through the neighborhood in recent years, and the potential for that to continue.
- Safety and the potential for increased vehicle crashes.
- Noise impacts due to increasing vehicular traffic through the area.
- Community values and the desire to maintain the rural character of the area and limit traffic growth.
 - The *Target Range Neighborhood Plan* emphasizes the importance of continued County maintenance of the structure to preserve access for local and Missoula Valley residents seeking recreational opportunities on nearby lands.
 - The *Target Range Neighborhood Plan* does not identify the need for a new bridge.
- Undesirable behavior related to individuals jumping off the bridge structure and/or recreating on the river islands, sand bars, and bridge scour hole.

ES.2 NEEDS AND OBJECTIVES

Needs and objectives were derived based on a comprehensive review of existing data and input from resource agencies, stakeholders and the public and were used to develop options. The needs and objectives reflect the existing social, environmental, and engineering conditions described in the Existing and Projected Conditions Report (**Appendix 3**) and recognize the local and regional use of the river crossing and the surrounding transportation system.

Need Number 1:

Improve the safety and operation of the river crossing and connecting roadway network.

OBJECTIVES (TO THE EXTENT PRACTICABLE)

- Improve sub-standard elements of facilities to meet current applicable design standards.
- Reduce delay and vehicle restriction for emergency responders under existing and future traffic demands.
- Manage travel speeds and provide adequate clear zones to improve operations.

Need Number 2:

Provide a long-term river crossing and connecting roadway network that accommodates planned growth in the Maclay Bridge area.

OBJECTIVES (TO THE EXTENT PRACTICABLE)

- Accommodate existing and future capacity demands.
- Address non-motorized facilities consistent with local planning efforts.
- Provide connectivity to neighborhood residents, and regional users accessing recreational lands to the west of the Bitterroot River.

Need Number 3:

Minimize adverse impacts from options to the environmental, cultural, scenic and recreational characteristics of the study area.

OBJECTIVES (TO THE EXTENT PRACTICABLE)

- Minimize adverse impacts to the Bitterroot River from potential options.
- Minimize adverse impacts to the wildlife and aquatic organisms from potential options.

- Provide reasonable access to recreational sites in the study area (Kelly Island Fishing Access Site, Lolo National Forest, and Missoula County Parks).
- Avoid or otherwise minimize adverse impacts to historic, cultural, and archaeological resources that may result from implementation of options.

Need Number 4:

Minimize adverse impacts from options to the neighborhood characteristics of the study area.

OBJECTIVES (TO THE EXTENT PRACTICABLE)

- Implement improvements with special sensitivity to area schools.
- Minimize impacts to existing residents and businesses in the area.
- Recognize the historic value of the Maclay Bridge to the community and the role it plays in local regional events.

Other Considerations (To the Extent Practicable)

- Options should be sensitive to the availability of funding for recurring maintenance obligations or for the construction of new improvements.

The subject of parking, vandalism, illegal activity, and enforcement, along with perpetuating access to recreational sites directly adjacent to the Maclay Bridge, are areas of concern generally outside the scope of this Maclay Bridge Planning Study. However, they are areas of concern that have been documented and commented on by members of the public.

ES.3 OPTIONS

Twenty eight options were identified and classified into four broad based categories. The first category included options that improved safety and operations on the existing bridge. Category two included options that would rehabilitate the existing bridge. Category three included options depicting a new bridge constructed at various locations, and category four was to do nothing. These options are listed below. The seven options identified as being appropriate for future consideration are shown in bold text and are more fully described in **Chapter 5**.

- Option 1 – Improve Safety and Operations on the Existing Bridge
 - 1A: Enhance Traffic Operations and Safety on and Near the Structure
 - 1B: Maintain Current Usage and Add Pedestrian/Bicyclist Facilities
 - 1C: Implement Additional Restrictions on Bridge Use
 - 1D: Close Bridge to Vehicles and Retain Use for Non-Motorized Travel Modes
 - 1E: Retain Bridge for Two-Way Travel and Provide New Bridge Elsewhere for Two-Way Travel
 - 1F: New One-Lane Bridge at a New Location and Retain Existing Bridge for Non-Motorized Uses
 - 1G: New One-Lane Bridge at a New Location for One-Way Travel and Retain Existing Bridge for One-Way Travel**
 - 1H: Close Bridge and Remove Structure
- Option 2 - Rehabilitate the Existing Bridge
 - 2A: Minor Rehabilitation (Structure Only)
 - 2B: Major Rehabilitation (Structure Only)
 - 2C: Minor Rehabilitation (includes Approaches)**
 - 2D: Major Rehabilitation (includes Approaches)**

- Option 3 - Build New Bridge
 - 3A.1: Build on Existing Alignment at North Avenue
 - 3A.2: Build Near Existing Alignment - North 1 Alignment**
 - 3A.3: Build Near Existing Alignment - North 2 Alignment
 - 3B.1: Build Bridge on Northern Alignment - South 3rd Street West Extension
 - 3B.2: Build Bridge on Northern Alignment - Spurgin Road Extension
 - 3C.1: Build Bridge on Mount Avenue - Mount 1 Alignment
 - 3C.2: Build Bridge on Mount Avenue - Mount 2 Alignment**
 - 3D.1: Build Bridge on Edward Avenue - Edward 1 Alignment
 - 3D.2: Build Bridge on Edward Avenue - Edward 2 Alignment
 - 3E.1: Build Bridge on South Avenue - South 1 Alignment**
 - 3E.2: Build Bridge on South Avenue - South 2 Alignment**
 - 3F.1: Build Bridge on Sundown Road - Sundown 1 Alignment
 - 3F.2: Build Bridge on Sundown Road- Sundown 2 Alignment
 - 3G.1: Build Bridge on Southern Alignment - Humble Road-Blue Mountain Road
 - 3H.1: New Bridge at a New Location Not Identified in the 1994 EA

- Option 4 – Do Nothing

ES.4 CONCLUSIONS AND NEXT STEPS

The study evaluated the Maclay Bridge river crossing and the surrounding transportation system to gain a better understanding of system needs, objectives, constraints and opportunities, and funding availability. In addition to analyzing applicable data from MDT, Missoula County, and resource agencies, a comprehensive public involvement process was conducted to gather relevant information from community members and stakeholders groups. This information led to a set of options to be considered by the Missoula County Commissioners.

The study identified several options that would address the operational characteristics, safety and physical conditions of the existing facility. However, based on the screening and ranking process, only one option rose to the top as the best alternative to ensure that, over the foreseeable future, the facility meets applicable MDT and local design standards and provides the desired improvements in safety and operations for the traveling public. Option 3E.1, South 1 Alignment delivers a transportation facility that meets current and future demands, addresses safety on the bridge and the sub-standard roadway approaches to the bridge, and provides connectivity to neighborhood residents and regional users accessing recreational lands to the west of Bitterroot River.

The Missoula County Commissioners may elect to proceed with one of the other options discussed in this study; however, three options (1G, 2C and 2D) may not be eligible for MDT's Off-System Bridge Program funding. For these options, Missoula County would need to use local funds and follow their own internal project development process.

Rehabilitating the bridge will not correct the deficient safety features needed to serve the long term intended use of the facility. Although Title 23 United States Code (USC) does allow rehabilitation (§ Section 144(o)), other provisions are needed to gain a complete understanding of when it would be prudent to rehabilitate a historic structure. Title 23 USC § 144(o)(1)) and §144(o)(3) are two sections that provide guidance. The rehabilitation option(s), in light of the provisions, would not be eligible in this particular instance for the reasons described in the provisions above and documented in Chapter 3 of this planning study.

A matrix summary of potential costs and funding eligibility for MDT's Off-System Bridge Program for the seven options identified as being appropriate for future consideration is included below.

Matrix Summary of Costs and Funding Eligibility ^(a)

Option ID	Comprehensive Cost	Eligible for Off-System Bridge Program Funds?	Reasoning for Funding Eligibility
OPTION 1 - IMPROVE SAFETY AND OPERATIONS ON THE EXISTING BRIDGE			
1G - New One-Lane Bridge at a New Location & Retain Existing Bridge for One-Way Travel	\$6,050,000 to \$8,450,000	POSSIBLE	Additional study is needed to determine eligibility. The comprehensive cost is shown as a range due to uncertainty on the potential scope of improvements to the existing Maclay Bridge.
OPTION 2 - REHABILITATE THE BRIDGE			
2C - Minor Rehabilitation (includes Approaches)	\$1,150,000 to \$1,500,000	NO	This option does not meet the Safety objective of the MDT Off-system Bridge Program.
2D - Major Rehabilitation (includes Approaches)	\$1,500,000 to \$3,900,000	NO	This option does not meet the Safety objective of the MDT Off-system Bridge Program.
OPTION 3 - BUILD NEW BRIDGE ^(b)			
3A.2 - North 1 Alignment	\$5,300,000	YES	This option meets the Safety objective of the MDT Off-System Bridge Program.
3C.2 - Mount 2 Alignment	\$9,000,000	YES	This option meets the Safety objective of the MDT Off-System Bridge Program.
3E.1 - South 1 Alignment	\$7,300,000	YES	This option meets the Safety objective of the MDT Off-System Bridge Program.
3E.2 - South 2 Alignment	\$7,450,000	YES	This option meets the Safety objective of the MDT Off-System Bridge Program.

^(a) "Comprehensive Costs" in this table include construction, preliminary engineering, incidental and indirect costs, inflation (3 percent per year for five years) and right-of-way costs.

^(b) The comprehensive cost estimates envision a new bridge and limited approach work to tie into the existing roads. This would meet the intent of MDT's Off-System Bridge Program by addressing bridge related safety issues. Roadway reconstruction outside of bridge approach tie-in points are likely not eligible for MDT's Off-System Bridge Program funding.

Chapter 1

INTRODUCTION

1.1. PURPOSE

Missoula County, in cooperation with the Montana Department of Transportation (MDT) and the Federal Highway Administration (FHWA), initiated a planning study of the Maclay Bridge over the Bitterroot River to determine the potential needs of the river crossing and connecting roadways within the area. The Maclay Bridge, also known as the North Avenue Bridge, is a single-lane structure that crosses the Bitterroot River approximately 2.75 miles west of Reserve Street. North Avenue connects to the existing bridge as the eastern approach, and River Pines Road serves as its western approach. A vicinity map showing the location of the Maclay Bridge and the surrounding area is shown as **Figure 1**.

Missoula County had previously nominated the Maclay Bridge for replacement under the Montana Department of Transportation Off-System Bridge Program (formerly known as the *Highway Bridge Replacement and Rehabilitation Program*). In 2006, the Maclay Bridge was Missoula County's number one priority.

Prior to proceeding with project development activities associated with a river crossing in the area of the Maclay Bridge, local leaders and elected officials, in conjunction with the aforementioned sponsors, agreed to develop this planning study to engage the public and take a fresh look at safety and operational elements of the Maclay Bridge and connecting roadways.

1.2. PROCESS

The *Maclay Bridge Planning Study* is a pre-National Environmental Policy Act (NEPA)/Montana Environmental Policy Act (MEPA) study that allows for early planning-level coordination with community members, stakeholders, environmental resource agencies, and other interested parties. The NEPA/MEPA environmental review process is an approach to balance transportation decision making that takes into account the need for safe and efficient transportation and the impacts on the human and natural environment. The study does not replace the NEPA/MEPA process.

The results of the study may be used to assist in determining the level and scope of environmental review required if a project is forwarded into a subsequent NEPA/MEPA process. It is also used to give information to the Missoula County Commissioners regarding identified areas of concern, transportation needs and objectives, the range of options considered, and public sentiment regarding potential options. The study assists in facilitating a smooth and efficient transition from transportation planning to future project development/environmental review, if a project is forwarded.

The *Maclay Bridge Planning Study* is a planning-level study and is not a design or construction project. It is not a decision document. The planning study identified options to address safety, geometric and environmental concerns based on needs of the river crossing and connecting roadways presented by the community, study partners, resource agencies, and other interested parties, and to increase safety and efficiency for the traveling public.

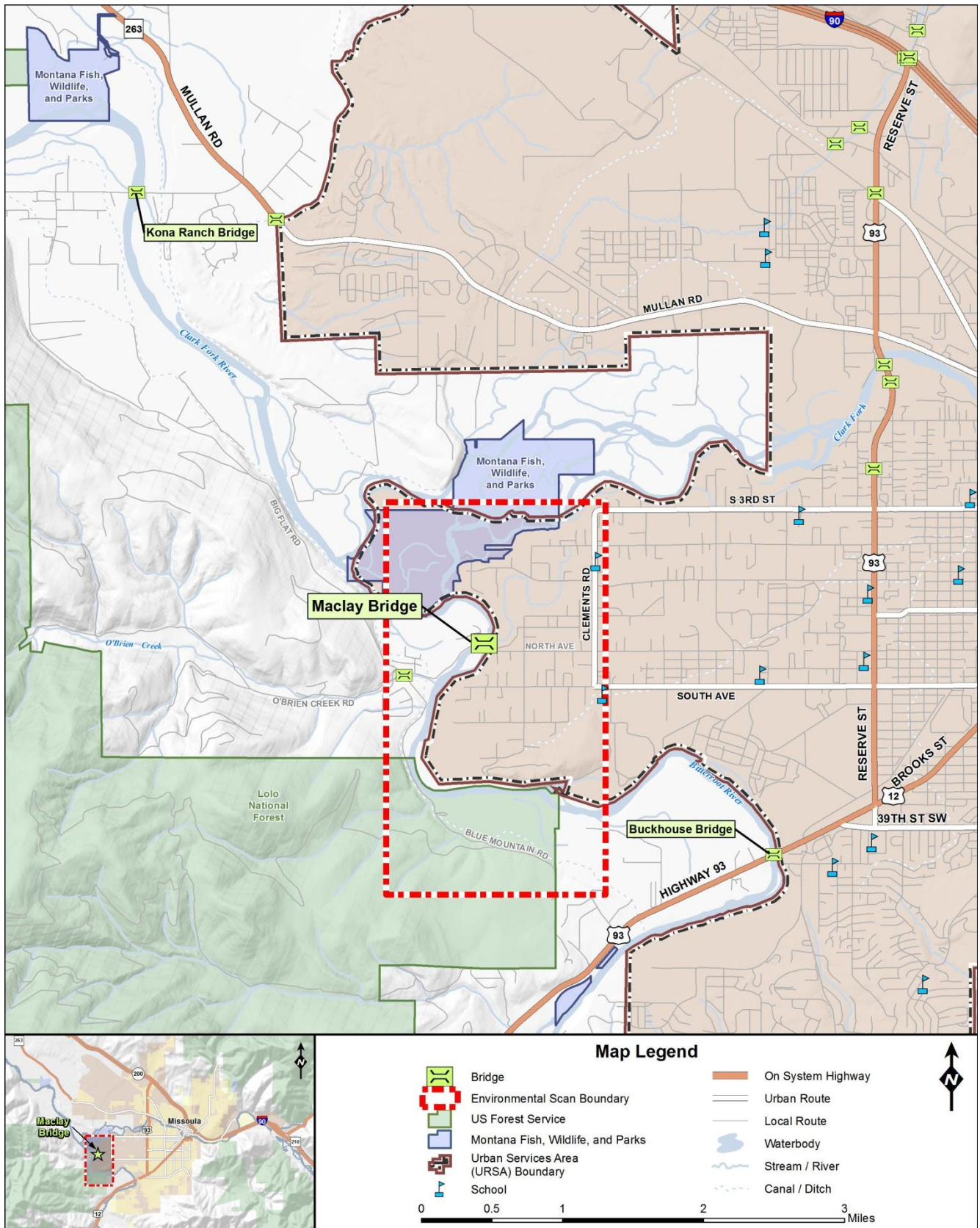


Figure 1: Vicinity Map

1.3. PREVIOUS PLANNING EFFORTS

In 1994, an Environmental Assessment (EA) for the *Maclay Bridge Site Selection Study*¹ was completed. The EA defined the purpose and need for a project for the river crossing, identified potential alternatives, and assessed the impacts of the various alternatives to address the project's purpose and need. Sixteen (16) alternatives were initially considered in the EA including:

- Bridge rehabilitation or bridge replacement (one-lane structure) at the current location;
- Numerous alternatives that would provide a new two-lane bridge elsewhere; and
- A “No Build” alternative.

Through a screening process, four alternatives were advanced for further consideration and a “Preferred Alternative” was identified. The Preferred Alternative was described in the EA as follows:

“A new two-lane (one lane for each direction of traffic) bridge constructed over the Bitterroot River which connects River Pines Road on the west side to South Avenue West on the east side. The Preferred Alternative includes increasing the number of lanes on the bridge from one lane (existing) to two lanes (proposed). The bridge cross section includes adequate shoulders for bicycle travel and a separated pedestrian walkway.”

The 1994 EA was completed and approved for circulation, however, a decision document (i.e. FONSI) was not issued. FHWA views a signed FONSI as the NEPA decision document for a project evaluated and advanced with an EA. During this timeframe, Missoula County had hoped to use special project demonstration funds from Congress to implement the project but was unsuccessful in obtaining the funding. The Maclay Bridge replacement project was inactive until the County nominated it to receive funding from MDT's Off-System Bridge Program in 2002.

Many of the underlying issues previously identified as deficiencies (and reasons for proposing transportation improvements) in the 1994 EA and subsequent safety inspections remain (**Appendix 3, Existing and Projected Conditions Report**). This, coupled with the community's ongoing interest in the Maclay Bridge and possible changes in traffic patterns resulting from potential options, served as the reason for initiating the *Maclay Bridge Planning Study*.

1.4. PREVIOUS MAINTENANCE EFFORTS

Minor maintenance activities have been performed on the bridge at various times since the completion of the 1994 EA. These maintenance activities are summarized below:

- The west bridge abutment was armored with material in anticipation of high water conditions during Spring run-off (April, 1997);
- The existing timber deck was replaced with corrugated steel decking and an asphalt overlay. In addition, bearings were replaced and/or added, and steel curbing was placed to prevent vehicular damage to pedestrian rail and truss elements (2003);
- The expansion joints at the west abutment were modified, as the expansion joints installed with the 2003 deck replacement were found to be inadequate and in need of repair (2004); and
- The expansion joint between the main truss and the pony truss was modified, as the expansion joint installed with the 2003 deck replacement were found to be inadequate and in need of repair (2005).

¹ Maclay Bridge Site Selection Study Environmental Assessment, Carter & Burgess Inc., April 1994

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Chapter 2

PUBLIC AND AGENCY PARTICIPATION

An important aspect of the planning study process was to provide opportunities for ongoing and meaningful public involvement. Education and public outreach were essential parts of achieving this goal. A *Community and Agency Participation Plan (CAPP)* was developed to identify public involvement activities needed to gain insight and seek consensus about existing and future transportation needs. The purpose of the plan was to ensure a proactive public involvement process that provided opportunities for the public to be involved in all phases of the planning study process. Specific public outreach measures are noted in this chapter. Meeting content, such as press releases, advertisements, agendas, presentations, minutes, etc., for all of the described activities, are provided in **Appendix 1 (Consultation, Coordination and Public Involvement)**.

2.1. PUBLIC INVOLVEMENT

2.1.1. INFORMATIONAL MEETINGS

Planning studies typically include two informational meetings. For the Maclay Bridge Planning Study, four informational meetings were held. All of the meetings were held in Missoula at locations in or near areas served by the Maclay Bridge. Press releases were distributed to area media outlets, and meeting announcements were advertised in local newspapers (*Missoulian* and *Missoula Independent Press*) twice prior to each meeting (at one week and three week intervals). The ads announced the meeting location, time and date, purpose of the meeting, and the locations where documents may be reviewed.

2.1.1.1. First Informational Meeting

Eighty-nine members of the public signed the attendance sheet for the first informational meeting held on April 24th, 2012 at Big Sky High School. The purpose of the meeting was to inform interested parties about the scope and purpose of the planning study, and to solicit input on the existing conditions and concerns within the study area that may be relevant to the planning effort. The meeting began with a Powerpoint presentation about the study process and purpose, and was followed by a question and answer period. Topics, concerns and statements were offered by numerous attendees, including these notable comments:

- Who ultimately makes the decision on what to do about the bridge?
- Community support needs to be considered when developing recommendations.
- The term “functionally obsolete” paints a bad picture of the bridge when in reality the bridge is structurally sound.
- Traffic projections should include adjustments for zoning and growth.
- Zoning and land use should be looked at along both sides of the Bitterroot River.
- If changes are made, the effects to traffic along South Avenue should be examined.
- Construction costs should be an important consideration in developing recommendations.
- Replacing the bridge seems to be part of ultimately building a west-side bypass.
- Replacing the bridge will induce growth in the area.
- The results of the 1994 EA are outdated and may be inaccurate.
- The desires of the community need to be incorporated into the study.

2.1.1.2. Second Informational Meeting

Seventy-five members of the public signed the attendance sheet for the second informational meeting held on July 10th, 2012 at Target Range Elementary School. The purpose of the meeting was to inform interested parties about the existing and projected conditions in the Maclay Bridge vicinity, resource considerations in the environmental scan boundary area, and preliminary areas of concern. A Powerpoint presentation summarizing the information was given, followed by small group work sessions. After the small group work sessions, meeting attendees reconvened into a larger audience to hear the salient points of each group's discussions. Topics that were covered in each of the small groups included the following:

- Safety;
- Traffic volume growth;
- Non-motorized transportation;
- Parking;
- Roadway/bridge widths;
- Social; and
- Environmental considerations.

The goal of the small group work session was to:

- Provide a means for those that are interested to be part of the planning process;
- Receive comments on information contained in the Existing and Projected Conditions Report (E & P Report) and Environmental Scan; and
- Gather comments from participants, supplemented by findings of the E & P Report and Environmental Scan, to formulate a set of transportation system needs and objectives which could then be used to develop potential options.

2.1.1.3. Third Informational Meeting

Eighty-one members of the public signed the attendance sheet for the third informational meeting held on September 27th, 2012 at Big Sky High School. The purpose of the meeting was to review the draft needs and objectives, and the draft options under consideration, with the public. A Powerpoint presentation was given, followed by a comment period in which participants were asked to step up to a podium and provide their comment in 3 minutes or less. The more notable concerns and statements offered at the meeting included:

- What happens if the old bridge is removed? Who pays for removal costs?
- Have you considered the impact to wetlands and flood plains at the end of South Avenue?
- Do you know the cost of a new bridge at a South Avenue location? It would have to be put on pillars to avoid the flood plain and associated wetlands.
- If a new bridge was built, who pays for the approaches to the bridge, especially if considerable road work is necessary? Does it come from Federal, state or local funds?
- What is the life expectancy of the existing bridge under rehabilitation?
- Do you know the origin of the steel, and how strong it is? That would influence the rehabilitation potential in the future.
- Is the style and width of a new bridge known?

2.1.1.4. Fourth Informational Meeting

110 members of the public signed the attendance sheet for the fourth informational meeting held on January 31st, 2013 at the Guest House Inn and Suites Conference Center. The purpose of the meeting was to review the screening process and the draft planning study report. A Powerpoint presentation was given, followed by a comment period in which participants were asked to step up to a podium and give their comment in 4 minutes or less. Topics, concerns and statements were offered by numerous attendees, with the more notable as follows:

- Belief by some members of the public that the screening process was flawed.
- Disenchantment with the study process and the lack of public involvement.
- Disappointment that an “intermediate” rehabilitation option for the bridge wasn’t considered.
- Concern over the costs of a replacement bridge and who pays for periphery improvements.
- Concern over impacts to the floodplain and the health of the riverine environment.
- Concern over report projection of traffic increases in front of Target Range School.
- Support for better distributing traffic throughout the neighborhood via a new bridge on South Avenue (i.e. doesn’t require out-of-direction of travel).

2.1.2. OTHER PUBLIC INVOLVEMENT EFFORTS

One flyer and three newsletters were produced that described the work in progress, results achieved, screening process, and other topics. The publications were made available at the informational meetings and were posted to the study website. In addition, copies were mailed to the following stakeholders:

- Missoula County Commission
- Missoula Emergency Services
- Missoula County Public Schools
- Target Range School District
- Mountain Home Montana
- MT Department of Fish, Wildlife and Parks
- US Forest Service
- Target Range Homeowners Association
- Missoula Rural Fire District
- Maclay Bridge Alliance
- Maclay Bridge Common Sense Coalition
- Community Medical Center
- Hidden Heights Homeowners Association
- Target Range Water and Sewer District

A website (<http://mdt.mt.gov/pubinvolve/maclay>) provided up-to-date information regarding the study as well as an opportunity to provide comments on the study. Draft documents were posted for public review and comment during the study process. Informational announcements were posted to the website to encourage public involvement in the study.

An email distribution list was created and maintained over the duration of the study. Advance notification of the informational meetings was made to those on the email distribution list before the meeting date. The number of individuals on the list grew to 108 people during the course of the study.

2.2. STAKEHOLDER PARTICIPATION

A stakeholder contact list was developed to include individuals, businesses, or groups identified by Missoula County, MDT, and/or the Consultant based on knowledge of the study area. The intent of developing the stakeholder list was to identify those individuals and groups to actively seek out and engage in the various phases of the study (**Appendix 3, Community and Agency Participation Plan**). Individual meetings were held with two of the stakeholder groups, the Maclay Bridge Common Sense Coalition and the Maclay Bridge Alliance, on September 4, 2012, during the morning and afternoon, respectively. The purpose of these meetings was to gather input and hear stakeholder concerns on the planning study process and associated deliverables (i.e. memorandums and reports).

2.3. RESOURCE AGENCY WORKSHOP

A resource agency workshop was held on May 21, 2012, at MDT Headquarters in Helena. A remote location was also made available in Missoula for those unable to attend in Helena. The resource agency workshop was held to provide an overview of the study and process, and confirm content and accuracy of the Environmental Scan document. Each agency was sent a draft Environmental Scan prior to the workshop in order to set the stage for further discussion. The agencies involved in the workshop included the following:

- Environmental Protection Agency (EPA)
- Montana Department of Environmental Quality (MDEQ)
- Montana Fish, Wildlife and Parks (MFWP)
- Montana Department of Natural Resources and Conservation (DNRC)
- US Army Corps of Engineers (USACOE)
- US Fish and Wildlife Service (USFWS)

The workshop included an overview of the study and a summary of the pre-NEPA/MEPA planning study process. Open discussion was held on various resource areas that the agencies felt needed to be further identified, supplemented or considered. These notable comments were heard at the resource agency workshop:

- **Floodplain/Hydraulics** - The Bitterroot River has migrated to the west over the years. Riprap was put in as mitigation in the 70's and 80's. The bridge is at a pinch point in the floodplain. In the case of a replacement bridge, Missoula County would have a "no increase" requirement for the 100-year base flood elevation. An exception may be allowed if a CLOMR (Conditional Letter of Map Revision) is prepared, reviewed and approved by FEMA. After the CLOMR, a LOMR (Letter of Map Revision) would have to be completed. This process can be very time consuming, and would allow for a 0.5 foot increase of the 100-year base flood elevation, and only after hydraulic modeling shows it would not affect adjacent property.
- **Bridge Deck Drainage** - Drainage from the bridge currently flows off the deck structure. Impacts resulting from drainage off of a new bridge deck should be considered. Bridge deck drainage should be channeled off the bridge and possibly detained/retained before discharge.
- **Bridge Span** - If a new bridge is constructed, the largest span practicable should be utilized to minimize impacts within the floodplain.
- **Induced Growth** - An evaluation of impacts related to induced growth should be conducted if a project is developed.
- **Vehicle / Wildlife Conflicts** - Impacts to potential vehicle / wildlife collisions should be analyzed if speeds are increased as a result of a project identified from the study.

2.4. PLANNING TEAM MEETINGS

A study planning team was established with representatives from Missoula County, MDT, and FHWA. The team met regularly (approximately every three weeks) during the twelve-month study to discuss study progress, analysis methodologies and results, draft technical memorandums and reports, and other issues and concerns. The planning team served in an advisory role and reviewed study documentation before publication. In addition, representatives of the Maclay Bridge Alliance and the Maclay Bridge Common Sense Coalition regularly attended the meetings. They were observers of the process but did not have direct input into the planning team meetings. Their attendance was noted and reflected in the meeting minutes throughout the duration of the study.

2.5. PUBLIC AND AGENCY COMMENT PERIOD

The public and agency comment period for the draft planning study report extended from January 30, 2013 to February 22, 2013. 137 written comments were received during the comment period, with an additional 4 written comments received after the comment period expired. Written comments and responses are presented at the beginning of **Appendix 1 (Consultation, Coordination and Public Involvement)**.

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Chapter 3

EXISTING AND PROJECTED CONDITIONS

This chapter presents the existing and projected road and bridge conditions, and environmental factors, for the Maclay Bridge planning area. These conditions and factors were utilized as part of the planning analysis to identify known issues and areas of concern. If an option is forwarded from this study to project development, this general information may be used to support future, detailed “project level” analysis.

3.1. LOCAL PLANNING DOCUMENTS

Missoula County and the City of Missoula have a cooperative agreement in place to conduct planning based on the shared environmental, economic, aesthetic, and social values of city and county residents. The agreement created a City-County Office of Planning and Grants (OPG) which is responsible for land use permitting, long range planning, transportation planning, historic preservation, housing, and a variety of other programs. Numerous planning documents exist that guide or supplement Missoula County’s Growth Policy. The planning documents listed below were reviewed to provide a context for the Maclay Bridge Planning Study. The Existing and Projected Conditions Report (**Appendix 3**) contains more information from these planning documents and considerations that may be important to the development of options for the Maclay Bridge.

- 2008 Missoula Long Range Transportation Plan
- 2012 Missoula Long Range Transportation Plan
- Missoula 2011 Active Transportation Plan (MATP)
- Missoula Transit Development Plan
- 2012 Missoula County Parks and Trails Master Plan
- Missoula Urban Area Open Space Plan 2006 Update
- 2004 Master Parks and Recreation Plan for the Greater Missoula Area
- Missoula County Growth Policy
- Missoula Urban Comprehensive Plan: 1998 Update
- Missoula Urban Fringe Development Area (UFDA) Project
- Target Range Neighborhood Plan
- Lolo National Forest Plan

3.2. EXISTING TRANSPORTATION CONDITIONS

3.2.1. EXISTING ROADWAY USERS

Primary users of the Maclay Bridge river crossing are local residents from the Target Range and Orchard Homes neighborhoods (east of the Bitterroot River), land owners west of the Bitterroot River, and city and county residents accessing recreational uses along the Bitterroot River and USFS lands. Additionally, this river crossing is used by pedestrians, bicyclists, emergency services providers, and school buses.

3.2.2. EXISTING TRAFFIC VOLUMES

Historic traffic data for area roadways was obtained from MDT's Bureau of Data & Statistics. **Table 1** shows the most recent 20 years of traffic data for two count stations in the area: one located on River Pines Road just west of the Maclay Bridge and one located on North Avenue just west of Clements Road. The traffic data in **Table 1** is representative of the average annual daily traffic (AADT) volume, in vehicles per day (vpd).

Table 1 shows the 2010 AADT volumes were 2,610 vpd (on River Pines Road) and 2,000 vpd (on North Avenue). 2010 is the most recent year for which traffic count data is available for both locations shown in **Table 1**.

Table 1: Average Annual Daily Traffic

Street	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
River Pines Rd	300 ft W of Maclay Bridge	1610	1580	1840	2060	2190	2230	(a)	(a)	(a)	2230
North Ave	300 ft W of Clements Rd	1610	(a)	2200	(a)	1960	(a)	1980	(a)	1790	(a)

Street	Location	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
River Pines Rd	300 ft W of Maclay Bridge	2300	2060	2300	2130	2410	2460	(a)	2380	2610	2360
North Ave	300 ft W of Clements Rd	1660	(a)	2010	(a)	2140	(a)	(a)	(a)	2000	(a)

Source: MDT Data and Statistics Bureau, Traffic Data Collection Section, 2012

(a) Data unavailable

3.2.3. PROJECTED TRAFFIC VOLUMES

Projected transportation conditions were analyzed to estimate how traffic volumes and transportation characteristics may change compared to existing conditions. The analysis was based on existing volumes projected out to the year 2040. While there are several methods available to project traffic volumes, the preferred method is to use the adopted Travel Demand Model (TDM) used by Missoula County and MDT, as it provides the best representation of the "built" environment found within the area. The TDM incorporates land use planning found within the Missoula County Growth Policy, including zoning, and also reflects the preferred growth scenario found within the Urban Fringe Development Area (UFDA). Additionally, the TDM is the tool utilized for the Missoula Area Transportation Plan (2008 and 2012 Updates).

3.2.3.1. Future Traffic Modeling

The TDM is a tool to predict future traffic growth. The TDM was developed using year 2010 AADT information to determine baseline conditions. Future land use information from the Missoula County Growth Policy, including zoning, was applied to the model to project year 2040 conditions. For planning purposes, the TDM was used for future year projections and option analysis. The TDM utilizes existing housing and employment data, with the existing transportation network, to represent the "built environment" found within the area.

Table 2 provides a summary of traffic count locations within the study analysis area. These results are also shown in **Figure 2**.

Table 2: 2040 AADT Traffic Modeling Projections

Street	Location	2010 AADT	2010 TDM	2040 TDM	TDM % Diff	Projected 2040 AADT ^(a)
Big Flat Rd	100 ft W of O'Brien Ck Rd	1,870	2,199	7,691	249.7%	6,550
Blue Mountain Rd	500 ft N of Hwy 93	2,360	2,628	6,091	131.8%	5,450
Blue Mountain Rd	S of South Side Rd	1,370	1,674	5,346	219.4%	4,400
Brooks St	Bitterroot River Bridge	26,530	26,157	45,368	73.4%	46,000
Clements Rd	300 ft N of North Av	3,140	2,615	4,914	87.9%	5,900
Clements Rd	300 ft S of North Av	2,750	1,811	2,549	40.8%	3,850
Clements Rd	500 ft S of S 3rd W	2,350	1,914	3,677	92.1%	4,500
Kona Ranch Rd	Kona Ranch Bridge	^(b)	1,723	6,471	275.6%	^(b)
Mullan Rd	E of Snowdrift Ln	3,950	4,284	9,870	130.4%	9,100
North Av	300 ft W of Clements Rd	2,000	1,318	3,118	136.6%	4,750
Reserve St	Between Dearborn & South Av	33,580	32,617	45,425	39.3%	46,750
Reserve St	Between OlofsonDr & S 3rd W	38,010	38,985	51,443	32.0%	50,150
Reserve St	Between South Av & Central Av	36,740	36,953	47,510	28.6%	47,250
Reserve St	S of LarkenwoodDr	37,930	39,255	52,411	33.5%	50,650
River Pines Rd	300 ft W of Maclay Bridge	2,610	2,779	6,039	117.3%	5,650
S 3rd W	W of Reserve	7,620	6,690	11,596	73.3%	13,200
S 7th W	150 ft W of Reserve	1,320	1,901	4,664	145.3%	3,250
S 7th W	300 ft E of Clements Rd	350	345	699	102.6%	700
South Av	Between 31st and 33rd	6,610	6,491	8,187	26.1%	8,350
South Av	Between Humble & Pleasant	1,770	2,210	3,638	64.6%	2,900
South Av	Between Reserve & 26th	15,010	14,914	16,255	9.0%	16,350
South Av	E of Clements Rd	4,350	4,952	6,141	24.0%	5,400
South Av	W of Clements Rd	4,710	5,379	7,453	38.6%	6,550
Spurgin Rd	250 ft W of Reserve	2,000	2,401	3,086	28.5%	2,550
Spurgin Rd	300 ft E of Clements Rd	980	1,033	1,285	24.4%	1,200

Source: MDT Multi Modal Planning Bureau, Statewide & Urban Planning Section, 2012; Missoula Office of Planning and Grants, Transportation Division.

^(a) Projected AADT's rounded to nearest 50 vpd.

^(b) Data unavailable

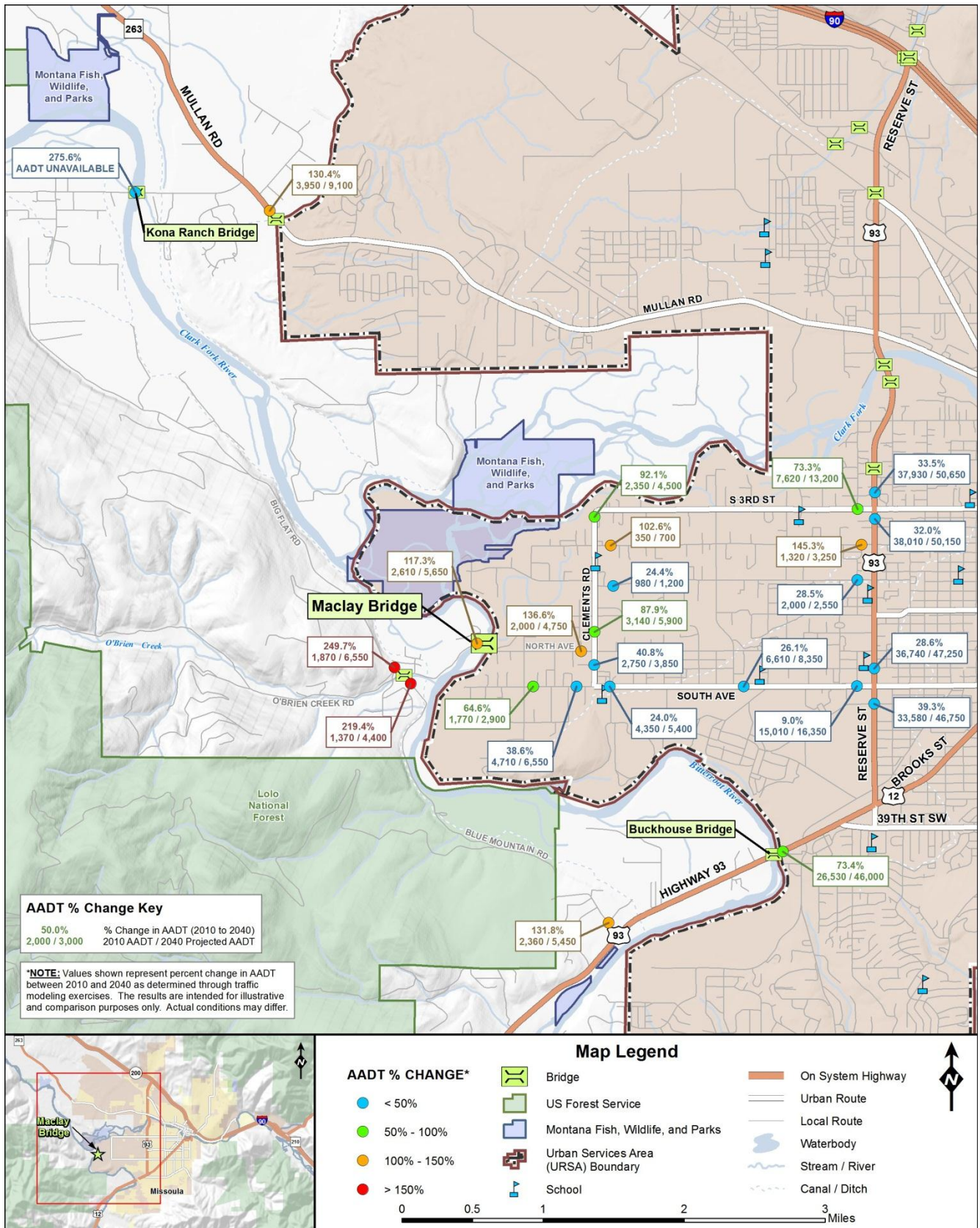


Figure 2: Percent Change in AADT

3.2.4. CRASH ANALYSIS

The MDT Traffic and Safety Bureau provided crash data for the ten-year period from January 1, 2002 to December 31, 2011. The crash data was provided for the following areas:

- Township 13 North, Range 20 West, Section 26
- Township 13 North, Range 20 West, Section 27
- Township 13 North, Range 20 West, Section 34
- Township 13 North, Range 20 West, Section 35

According to the MDT crash database, there were 131 total crashes reported within these identified areas during the ten-year period. Reportable crashes are defined as those with a fatality, an injury, or property damage only exceeding \$1,000 in damages.

As part of the crash analysis, crash investigation reports were reviewed to help identify specific locations and contributing factors. A location map of the reported crashes is shown in **Figure 3**. Based on the crash data, a number of crash clusters and trends were identified as listed below, and are more fully discussed in the Existing and Projected Conditions Report (**Appendix 3**).

- Big Flat Road
 - Single vehicle crashes along the horizontal curve approximately 0.15 miles north of the intersection with River Pines Road.
- Blue Mountain Road
 - Single vehicle crashes along the sharp horizontal curve approximately 0.3 miles south of the intersection with River Pines Road.
 - Single vehicle crashes along the horizontal curves located approximately 0.5 to 0.9 miles south of the intersection with River Pines Road.
- North Avenue
 - Crashes with inattentive driving and failure to yield listed as contributing circumstances between Humble Road and the Maclay Bridge.
- River Pines Drive
 - Single vehicle crashes at or near the intersection with Riverside Drive under “dark not lit” conditions.
 - Single vehicle crashes along the horizontal curves located approximately 0.15 to 0.30 miles southwest of the intersection with Riverside Drive.
 - Crashes between the intersection with Big Flat Road and the sharp horizontal curve located approximately 0.25 miles east of Big Flat Road.
- South Avenue
 - Single vehicle crashes between the intersections with Pauline Drive and Woodlawn Avenue under “dark not lit” conditions.

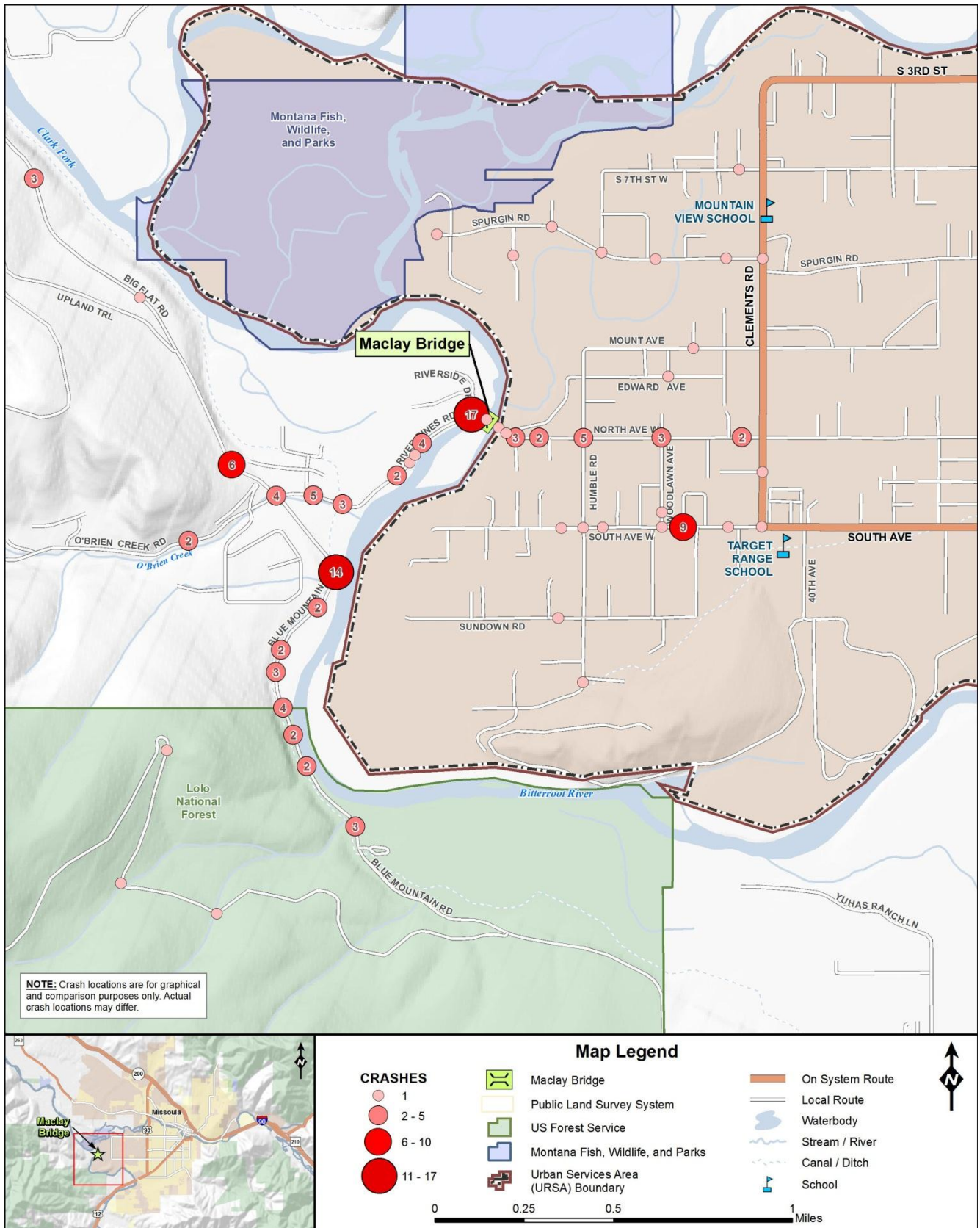


Figure 3: Crash Locations (01/01/2002 – 12/31/2011)

3.2.5. TRAVEL TIMES

A “travel time” evaluation was conducted to determine the approximate time it would take to travel within the Maclay Bridge area from three selected emergency service provider locations. The travel time evaluation was completed during the middle of a weekday, during off-peak travel hours. Travel times along three distinct routes from east of the Bitterroot River to the intersection of Big Flat Road/Blue Mountain Road/O’Brien Creek Road/River Pines Road were calculated. Each route crossed the Bitterroot River using one of three crossings: the Maclay Bridge, the Kona Ranch Bridge, or the Buckhouse Bridge.

The three origins that were identified for this analysis included the following:

- Missoula Rural Fire Station #1 – Located on South Avenue
- Community Medical Center – Located on South Avenue
- Missoula Rural Fire Station #6 – Located on Mullan Road

The results of the evaluation suggests that if the Maclay Bridge river crossing is inaccessible, the time it would take to reach the subject intersection of Big Flat Road/Blue Mountain Road/O’Brien Creek Road/River Pines Road from most of the locations of interest increases. For example, if the Maclay Bridge was out of service, it was estimated to take approximately 18.58 minutes longer using the Kona Bridge or 4.47 minutes longer using the Buckhouse Bridge when travelling between Community Medical Hospital and the subject intersection. In terms of emergency service, this means that travel times would likely be longer if the Maclay Bridge crossing is out of service.

3.2.6. DESIGN STANDARDS

Design standards are an important consideration when assessing existing areas of concern, as well as for planning new infrastructure. Depending on funding source, different sets of design standards may be applicable to the river crossing. One set of standards are the design standards in place by Missoula County. These standards, found in the Missoula County *Public Works Manual 2010*, set forth road design considerations for various roadway classifications.

AASHTO design standards may also be applicable since Missoula County does not have any specific “bridge related” standards to measure against. AASHTO bridge width standards allow a single-lane bridge only for very low volume roads in which traffic is less than 100 vpd.

Finally, an additional set of design standards, and those that may be considered in design if Federal or State funds were used for any type of project identified through this planning effort, are the standards and guidelines found in MDT’s *Road Design Manual (RDM)*. The RDM specifies general design principles and controls which determine the overall operational characteristics of the roadway.

For most “off-system” locations such as the Maclay Bridge (i.e. not on a State-highway), local conditions and context to the surrounding land uses would be considered in developing geometric features such as road width, acceptable curves, and the need for non-motorized facilities.

3.2.7. ROADWAY GEOMETRICS

Existing roadway geometrics were evaluated and compared to current Missoula County standards. The analysis was conducted based on a review of public information, bridge drawings, Geographic Information Systems (GIS) data, and field observations. As-built drawings for area roadways were not available. As such, a field review was conducted in April 2012 to confirm and supplement information, as well as to identify additional areas of concern within the Maclay Bridge area.

3.2.7.1. Horizontal Alignment

Elements comprising horizontal alignment include curvature, superelevation (i.e. the “bank” on the road), and sight distance. These horizontal alignment elements influence traffic operation and safety. Missoula County roadway standards for a collector roadway were used as a basis to evaluate existing design concerns along River Pines Road and North Avenue. Missoula County’s standards for horizontal curves are defined in terms of curve radius, and for a collector roadway, the minimum required radius is 525 feet.

Three horizontal curves were identified that do not meet current Missoula County standards. The presence of sub-standard curvature may contribute to crash numbers and severity.

3.2.7.2. Vertical Alignment

Vertical alignment is a measure of elevation change of a roadway. The length and steepness of grades directly affects the operational characteristics of the roadway. In addition, the available stopping sight distance for the vertical alignment, and specifically the vertical curvature, also directly affects the operational characteristics of the roadway.

Missoula County roadway standards for a collector roadway define a maximum allowable vertical grade of 6.0 percent. Both roadways connecting to the Maclay Bridge were estimated to have grades that do not exceed the Missoula County standard of 6.0 percent for a collector roadway or the current MDT design standards.

3.2.7.3. Roadside Clear Zone

The roadside clear zone, starting at the edge of the traveled way and extending away from the roadway, is the total roadside border area available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and/or recovery area. The desired clear zone width varies depending on traffic volumes, speeds, and roadside geometry.

Within the Maclay Bridge area, there were locations identified that do not meet the Missoula County horizontal clearance requirements for a collector roadway. The most notable area is located along River Pines Road, just southwest of the existing bridge. At this location, the top of roadway fill slope is between 2 and 4 feet from the edge of the travel lane. In addition, trees and utility poles are found within this area. The roadway fill slope in this area is steep and lined with riprap to the river.

3.2.8. BRIDGE CONSIDERATIONS

The dominant transportation feature located within the study area is the Maclay Bridge. It has been the subject of past technical and planning level analysis, and was analyzed in detail during the development of the 1994 *Maclay Bridge Site Selection Study EA*. A copy of the most recent Bridge Inspection Report completed by MDT is included in the Existing and Projected Conditions Report (**Appendix 3**).

Since the 2011 Bridge Inspection Report was prepared, the posted load limit was reduced from 14 tons to 11 tons based on analysis by MDT engineers. The two primary vehicles impacted by this reduction were school buses and fire trucks. School buses are generally within the 11 ton limit, as they weigh approximately 19,000 pounds when empty and 22,000 pounds when loaded. Fully loaded school buses are near or at the 11 ton limit. School buses are allowed across the bridge, as long as they do not exceed the posted 15 mph speed limit.

An agreement exists that allows the local rural fire department to operate their Type I fire engines (i.e. overweight vehicles) across the bridge, as long as they straddle the centerline of the bridge and travel no more than 5 mph.

The 2011 Bridge Inspection Report noted some areas of concern related to a variety of bridge features, such as:

- Transverse cracking in deck asphalt surfacing;
- Paint loss and rusting on various features, such as floor beams, bottom chords, and steel stringers;
- Minor cracking and spalling on concrete pier wall and abutments; and
- Moveable roller bearings are not functional and are out of alignment.

Additionally, the following concerns were identified during the public process and confirmed in the field:

- The current structure exhibits spalling and cracked concrete and exposed rebar;
- Rust and steel pitting is observed under the bridge on some load bearing members and the deck;
- The bridge is a composite of varying ages and types of load-bearing steel used throughout the structure; and
- The strength of the steel is unknown in much of the bridge, as it has never been tested.

3.2.8.1. Sufficiency Rating

An important consideration in the evaluation of roadway bridges is the sufficiency rating associated with the structure. The sufficiency rating formula is the industry standard of evaluating highway bridge data to obtain a numeric value indicating the sufficiency of the bridge to remain in service. The sufficiency rating is expressed by a value ranging from 0 to 100 with 100 being an entirely sufficient bridge and 0 being an entirely deficient bridge. To receive funding through the Off-System Bridge Program, structures must be classified as “Structurally Deficient” or “Functionally Obsolete” and have a sufficiency rating of 80 or below. Structures with a sufficiency rating of 0 to 49.9 are eligible for replacement, and structures at 50 to 80 are eligible for rehabilitation unless otherwise approved for replacement by the FHWA.

Based on the most recent Bridge Inspection Report, the Maclay Bridge was determined to be functionally obsolete, but not structurally deficient. Its sufficiency rating is calculated to be 27.3, which is less than 49.9, thereby making the bridge eligible for replacement.

A functionally obsolete bridge is one that was built to standards that are not used today. Functionally obsolete bridges are those that do not have adequate lane widths, shoulder widths, or vertical clearances to serve current traffic demand, or those that may be occasionally flooded. Functionally obsolete bridges are not automatically rated as structurally deficient, nor are they inherently unsafe. American Association of State Highway Transportation Officials (AASHTO) standards specify single-lane bridges are appropriate on routes with AADT volumes less than 100 vpd. For the Maclay Bridge, the appraisal values for the “Deck Geometry” and the “Approach Roadway Alignment” are such that the bridge is categorized as being functionally obsolete. This is based on the single-lane width of the bridge being sub-standard for the current traffic volumes, and the sub-standard curves on both approaches to the bridge.

An analysis of off-system bridge data for Montana indicates that 98.3 percent of all off-system bridges have a sufficiency rating higher than the Maclay Bridge.

3.2.8.2. Bridge Health Index

The “Health Index” is a variable based on “weighting” bridge components to establish a clear, dependable communication of bridge performance information to management, elected officials, and the public. The Bridge Health Index is a 0-100 ranking system for bridge maintenance with 100 being a “best” condition and 0 indicating a “worst” condition. The health index provides an indication of how individual bridge components rank on the 0-100 condition scale. To generate a health index rating for the entire bridge,

weighted values are assigned to the individual bridge components according to the economic consequences of their failure. Thus, components whose failure has relatively little economic effect, such as railings, receive less weight than those whose failure could close the bridge, such as girders. The Health Index number provides a performance measure and management tool for bridge maintenance.

The health index is not an FHWA directive for assessing bridges, rather, it was developed by the California Department of Transportation (Caltrans) and its computations are now included in bridge management software used by state highway agencies. Guidance provided by Caltrans indicates the health index concept for a single bridge be evaluated in context with a statewide network of bridges. Based on the recent October 31, 2011 bridge inspection, the Maclay Bridge was given a health index of 89.91. Montana's statewide off-system bridge data indicates that 72.9 percent of all off-system bridges have a health index higher than the Maclay Bridge health index. This health index value places the Maclay Bridge near the bottom quartile (i.e. lowest 25 percent) of all off-system bridges.

3.2.8.3. Fracture Critical Status

The Maclay Bridge is fracture critical. Truss bridges are typically fracture critical. If one part of the truss should fail, the entire bridge span may fail. As a bridge ages and traffic increases, the steel in the truss may begin to weaken because of fatigue. The bridge requires special "fracture critical" inspections to reduce the chance of failure. With proper inspection and maintenance, the bridge is considered safe. An inspection that shows a problem could result in immediate closure. No immediate concern has been identified for the Maclay Bridge due to its fracture critical status.

3.2.9. PARKING CONSIDERATIONS AND CITATIONS

Over the past 30 years, Missoula County has passed numerous resolutions that restrict parking within the vicinity of the Maclay Bridge. Research of past resolutions indicates that parking concerns have existed since at least 1979.

A review of Missoula County "911 Calls" was also completed. In a search of the call records for the Orchard Homes and Target Range areas for June, July and August of 2010 and 2011, numerous citations were issued in response to activities near the Maclay Bridge. These citations included the following categories:

- Criminal Mischief, Curfew and Loitering, Disorderly Conduct, Disturbance, Suspicious Activity
- Extra Patrol
- Hazardous Vehicle
- Other Hazard

During this time period, there were 109 calls made for the area located at the east end of the existing bridge (4680 North Avenue West). Of these calls, 42 were for "hazardous vehicle", which is primarily related to parking concerns. The review of the provided 911 calls, coupled with the many parking resolutions passed over the four decades by Missoula County, indicate parking is a concern in the vicinity of the Maclay Bridge.

3.2.10. ROADWAY SURFACING

Existing roadway surfacing characteristics were determined through field measurements for River Pines Road, the Maclay Bridge, and North Avenue. Items measured included the surface width, lane width, shoulder width, and the presence of non-motorized features. **Table 3** shows the existing roadway and bridge widths.

Table 3: Existing Road and Bridge Surfacing

	Location	Lanes	Surface Width(ft)	Lane Width(ft)	Shoulder Width(ft)
North Ave W	Clements Rd to Maclay Bridge	2	31	11	1 (north) / 8 (south)
Maclay Bridge	On Bridge	1	14	14	0
River Pines Rd	Maclay Bridge to Blue Mountain Road	2	22	11	0

Source: Estimated based on field measurements

3.2.11. ACCESS POINTS

Access points were identified through a review of available GIS data, aerial photography and field observation. There are approximately 47 access points along River Pines Road and North Avenue. The vast majority of the access points are private approaches. There are 10 public approaches along these two segments within the study area. The prevalence of access points along a roadway can contribute to decreased safety as turning movements into and out of the access points may create conflict points.

3.2.12. RIGHT-OF-WAY

Existing right-of-way widths along River Pines Road and North Avenue are between 60 and 80 feet. New right-of-way, easements and/or construction permits from adjoining landowners will be required if options extend beyond existing right-of-way limits based on legal land survey.

A Montana Department of Natural Resources and Conservation (DNRC) land use license or easement would be required between the low water marks of the river for options involving the construction of a bridge at a new location.

3.2.13. HYDRAULICS

The Bitterroot River is the primary surface water feature within the study area. If a project is developed that impacts the Bitterroot River, mitigation will be required depending on the type of impacts anticipated and agency permitting requirements.

The Big Flat Irrigation Ditch crosses River Pines Road west of the Maclay Bridge. A small Missoula Irrigation District ditch parallels South Avenue and the ditch crosses South Avenue west of Humble Road and west of Clements Road.

3.2.14. FLOODPLAIN CONSIDERATIONS

The Maclay Bridge river crossing is located within a detailed delineated floodplain (FIRM panel 30063C1455). Accordingly, any bridge rehabilitation, reconstruction, or relocation would require a formal floodplain permit.

Executive Order (EO) 11988, Floodplain Management, requires federal agencies to avoid direct or indirect support of floodplain development whenever a practicable alternative exists. EO 11988 and 23 CFR 650 Part A requires an evaluation of project alternatives to determine the extent of any encroachment into the base floodplain. The base flood (100-year flood) is the regulatory standard used by federal agencies and most states to administer floodplain management programs. A “floodplain” is defined as lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, with a one percent or greater chance of flooding in a given year. As described in the Federal Highways Administration’s (FHWA) floodplain regulation (23 CFR 650 Part A), floodplains provide natural and beneficial values serving as areas for fish, wildlife, plants, open space, natural flood moderation, water quality maintenance, and groundwater recharge.

Missoula County floodplain regulations require the low chord of any “new” bridge to be 2 feet above the 100-year flood elevation. Missoula County would have a “no increase” requirement for the base flood elevation. Federal Emergency Management Agency (FEMA) regulations require that if a project results in an increase of the published base flood elevation, a conditional letter of map revision (CLOMR) must be approved. This process would allow for a 0.5 foot increase of the published base flood elevation, only if hydraulic modeling shows it would not affect adjacent property.

A CLOMR requires that FEMA approve the hydraulic model and revisions to the base flood elevation. A detailed floodplain model would be required to determine the proposed bridge opening and the effect on the base floodplain elevation. The existing Flood Insurance Study (FIS) model would be obtained and used, however, some new river cross sections would be required. This process can take a year or more.

3.2.14.1. Preliminary Hydrology

The Bitterroot River at the Maclay Bridge drains 2,814 square miles of area and consists mostly of forested mountainous terrain within a wide populated valley. The design flood for a reconstruction or relocation option would likely be the 100-year event due to the delineated floodplain and the risk to adjacent landowners. The 10, 50 and 500-year floods would also need to be modeled to meet CLOMR requirements. **Table 4** contains preliminary hydrology values as computed by MDT. This information is useful to identify general “order of magnitude” flows and compare the published FIS values against USGS calculated results.

Table 4: Preliminary Hydrology for Bitterroot River

Source	Area (sq mi)	Q2 (cfs)	Q5 (cfs)	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)	Q100 (cfs)	Q500 (cfs)
USGS ^(a)	2,814	14,500	20,000	23,400	27,300	30,000	32,500	38,000
FIS ^(b)	2,842			20,900		29,700	31,800	42,000

^(a) USGS gage number 12352500

^(b) The Flood Insurance Study (FIS) flows would likely be used for future design // Q = Flood flow in cubic feet per second (cfs)

3.2.14.2. Channel Characteristics

The Bitterroot River is meandering near the existing bridge, even though aerial photographs show that the banks have moved very little since the 1976 flood event, which was considered a historic flood year across Montana. The existing river crossing washed out at least two times since 1935. River Pines Road, located on the west side of the Bitterroot River, has rock riprap on its fill slope for approximately 750 feet upstream of the bridge. The FIS shows a 5-foot deep scour hole at the bridge, and about a foot of backwater for the base flood. Based on review of four aerial photographs from the years 1935 and 1961 (USFS), and 2003 and 2011 (USDA), it appears the scour hole has grown westward towards the west bank of the river. Scour holes can develop for a variety of reasons (i.e. poor angle of attack of the stream on the bridge, inadequate waterway opening under the bridge, etc.) and are of concern as scour holes can eventually reach the bottom of footings and undermine bridge supports (columns and/or abutments). Channel scour was not part of the original design requirements in the 1940's. The existing bridge piers are located in the river channel on unknown materials.

Gravel and sand bar development has been observed but not studied both upstream and below the existing bridge. It appears the channel has been altered with the deposition of material upstream of the bridge (changing the shape of the channel changes stream flow). Increased water velocities also remove material from the stream bed. If too much material is washed away, the piers in the channel may become unstable.

Backwater is a concern as it can flood adjacent properties and change the flow regime just upstream of the bridge. There is a large island upstream from the existing bridge that has been there for a long time

based on the size of the trees. Ice is considered to be light and debris is moderate at this location on the Bitterroot River. Although not studied, it appears that the existing bridge configuration has constricted the Bitterroot River when compared to its normal, free flow natural state. If a project is developed, this should be analyzed via detailed hydrologic and hydraulic modeling effort at some future time.

3.3. UTILITIES

The existing Maclay Bridge carries an eight-inch natural gas line. There are overhead utility lines along the south side of South Avenue and along River Pines Road. There are also buried phone lines along both roads. Near the easterly bridge approach, there is a NorthWestern Energy natural gas substation that serves as a primary feeder hub for gas infrastructure on both sides of the Bitterroot River. If a project is forwarded that affects the existing Maclay Bridge the gas main may be impacted.

3.4. ENVIRONMENTAL SETTING

This section summarizes the Environmental Scan (**Appendix 2**). The primary objective of the Environmental Scan is to determine the potential constraints and opportunities within the Environmental Scan boundary. As a planning level scan, the information is obtained from various reports, websites and other documentation. This scan is not a detailed environmental investigation. Refer to the Environmental Scan for more detailed information.

3.4.1. GEOGRAPHIC SETTING

The Maclay Bridge river crossing is located at the western end of the Missoula Valley at the confluence of the Clark Fork and Bitterroot Rivers and encompasses lands in both the City of Missoula and Missoula County, Montana. The topography east of the Bitterroot River is generally level, while the area west of the Bitterroot River is comprised of foothills for the Bitterroot Mountains. Surface elevations over most of the area average about 3,120 feet above sea level with elevations exceeding 3,500 feet in the McCauley Butte area and in foothill areas.

3.4.1.1. Land Ownership and Land Management

Most of the lands in the vicinity of the Maclay Bridge are privately owned with the exception of the Kelly Island Fishing Access Site, located near the confluence of the Clark Fork and Bitterroot Rivers, which is state-owned and managed by the MFWP. Some county-owned parcels and Lolo National Forest lands also exist in the area. Both the Five Valleys Land Trust and Rocky Mountain Elk Foundation hold conservation easements on some private lands within the general vicinity.

3.4.1.2. Land Use

Land use in the area consists mostly of suburban residential properties on one-half acre or larger parcels, a few commercial uses, two schools and recreational/open spaces. The area also contains agricultural uses on irrigated lands ranging in size from one acre to 50 acres.

3.4.2. PHYSICAL RESOURCES

3.4.2.1. Geologic Resources

According to Montana Bureau of Mines and Geology mapping, the area contains alluvial materials associated with modern channels and floodplains along with glacial lake deposits and volcanic bedrock in some portions. The foothills and mountains in the area are comprised mainly of Precambrian rocks of various formations.

3.4.2.2. Soils and Prime Farmland

Information regarding areas of prime farmland in the area was compiled from the US Department of Agriculture, Natural Resource Conservation Service (NRCS). Using the NRCS's Web Soil Survey website, several soil map units in the area have been classified as prime farmland if irrigated and farmland of local importance.

If a project is advanced using federal funds, coordination with the NRCS will be required to determine if the Farmland Protection Policy Act (FPPA) of 1981 (Title 7 United States Code, Chapter 73, Sections 4201-4209) applies and necessary NRCS processing requirements. Projects planned and completed without the assistance of a Federal agency are not subject to the FPPA.

3.4.2.3. Water Resources

SURFACE WATERS

Surface waters in the area include the Bitterroot River, the Clark Fork River, and O'Brien Creek. Information on these surface waters within the area was obtained from the Montana Department of Environmental Quality's (MDEQ) website. Section 303, subsection "d" of the Clean Water Act requires the State of Montana develop a list, subject to U.S. Environmental Protection Agency (USEPA) approval, of water bodies that do not meet water quality standards. When water quality fails to meet state water quality standards, MDEQ determines the causes and sources of the pollutants in a sub-basin assessment and sets maximum pollutant levels, called total maximum daily loads (TMDL).

A TMDL sets maximum pollutant levels in a watershed. The TMDL's become the basis for implementation plans to restore the water quality to a level that supports its designated beneficial uses. The implementation plans identify and describe pollutant controls and management measures to be undertaken (such as best management practices), the mechanisms by which the selected measures would be put into action, and the individuals and entities responsible for implementation projects.

The Bitterroot River and the Clark Fork River are both listed as a 303(d) water body within the area. Probable causes of impairment include nutrients, siltation/sediment, and thermal modification.

Placement of fill or excavation within these surface waters would be subject to regulation by the U.S. Army Corps of Engineers (USACOE) under Section 404 of the Clean Water Act and the Montana Stream Protection Act (SPA). Other water-related permits may also be necessary.

IRRIGATION FEATURES

The area contains irrigation features and infrastructure associated with the Big Flat Irrigation District and the Missoula Irrigation District. Any potential impacts to irrigation facilities will need to be examined to determine if the irrigation facilities are considered waters of the U.S. and subject to jurisdiction by the U.S. Army Corps of Engineers (USACOE) or need approvals from the U.S. Department of the Interior Bureau of Reclamation (facilities associated with the Big Flat Irrigation District were developed as a unit of the U.S. Department of Reclamation's Missoula Valley Project and were constructed in the late 1940's).

GROUNDWATER

The Missoula aquifer, which most of the urban area population relies on, is a shallow unconfined aquifer formed in coarse alluvial material (sands and gravels) extending from the Clark Fork River at Hellgate Canyon westward across the valley to the Bitterroot River. The Missoula aquifer was designated as a Sole Source Aquifer by the USEPA in 1988. Following the designation, the Missoula Valley Water Quality District was formed in 1993. An Aquifer Protection Ordinance, administered by the Water Quality District, was adopted in 1994.

3.4.2.4. Wetlands

The USACOE defines wetlands as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marches, bogs, and similar areas.

A wetlands survey was conducted for the Maclay Bridge EA in 1993 which identified riverine and areas of emergent and forested/shrub wetlands along the Bitterroot River. This survey is outdated and new wetland impact evaluations must be conducted if a project is forwarded. Wetland impacts should be avoided to the greatest extent practicable. All unavoidable wetland impacts would need to be mitigated as required by the USACOE.

3.4.2.5. Hazardous Material

The Montana Natural Resource Information System (NRIS) database was searched for underground storage tank (UST) sites, leaking underground storage tank (LUST) sites, abandoned mine sites, remediation response sites, landfills, National Priority List (NPL) sites, hazardous waste, crude oil pipelines, and toxic release inventory sites in the area.

The following sites were initially identified as locations with potential contamination impacts:

- Eight underground storage tank locations;
- One leaking underground storage tank location; and
- One petroleum release compensation site.

Further evaluation may be needed at specific sites to determine the potential for encountering contamination if a project requiring soil excavation is forwarded. This evaluation may include reviewing MDEQ files for specific sites and/or conducting subsurface investigation activities to determine the extent of soil and groundwater contamination at locations of interest. If contaminated soils or groundwater is encountered during construction, handling and disposing of the contaminated material would need to be conducted in accordance with State, Federal, and local laws and rules.

3.4.2.6. Air Quality

EPA designates communities that do not meet National Ambient Air Quality Standards (NAAQS) as “non-attainment areas”. “Nonattainment areas” are localities where air pollution levels persistently exceed the NAAQS or MAAQS (Montana Ambient Air Quality Standards), or that contribute to ambient air quality in a nearby area that fails to meet standards. States are then required to develop a plan to control source emissions and ensure future attainment of NAAQS. An area that has been designated as non-attainment in the past, but now complies with the NAAQS is classified as a “maintenance” area. Areas where air pollution levels do not exceed the air pollution thresholds established in the NAAQS are designated as “attainment” areas. Areas may also be designated as “Unclassifiable” where there is insufficient data to classify.

The Maclay Bridge area is located in a non-attainment area for PM-10 and a maintenance area for carbon monoxide.

Transportation conformity considerations will apply in this area if projects forwarded use federal or state funds to ensure that any proposed activities will not cause or contribute to any new violations of the NAAQS; increase the frequency or severity of NAAQS violations; or delay timely attainment of the NAAQS or any required interim milestone.

If a project forwarded uses federal or state funds, an evaluation will also be required to determine if there is any potential for Mobile Source Air Toxics Rule (MSAT) effects.

3.4.2.7. Noise

Should a project be advanced with federal funds, it will be necessary to establish whether the project is a “Type I Project” as defined in 23 CFR 772.5(h). Type I projects involve:

- Construction of a highway on a new location;
- The physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes; or
- The potential for creating a traffic noise impact (e.g., idling vehicles at rest areas, weigh stations).

A detailed noise analysis would be required for a Type I project. If it is determined that the project is not Type I, it is then considered a Type III project which does not require a noise analysis or consideration of noise abatement. Type II projects are retrofit noise abatement projects.

If a project is forwarded, future construction activities may cause localized, short-duration noise impacts.

3.4.3. VISUAL RESOURCES

Visual resources refer to the landscape character (what is seen), visual sensitivity (human preferences and values regarding what is seen), scenic integrity (degree of intactness and wholeness in landscape character), and landscape visibility (relative distance of seen areas) of a geographically defined view shed. The landscape throughout the area contains an array of biological, scientific, historic, wildlife, ecological, and cultural resources mixed with a remote location.

The Bitterroot River riparian corridor, the Kelly Island Fishing Access Site, Lolo National Forest land, and a large conservation easement in the McCauley Butte area provide areas of natural open space.

3.4.4. BIOLOGICAL RESOURCES

Existing information on wildlife, fisheries and special status species known to occur or that may potentially occur in the area was reviewed from a variety of sources including the U.S. Fish and Wildlife Service (USFWS), the MFWP, the Montana Natural Heritage Program (MNHP), and other resource documents. This limited survey is not intended to be a complete and accurate biological survey of the study area. A complete biological survey of the area would be needed before potential selection of a specific project site, if a project is forwarded.

3.4.4.1. Wildlife and Fish

General fish and wildlife resources would need to be surveyed during any future project development process. MFWP should be contacted during the project development process for local expertise regarding the wildlife and fisheries resources of the area. If a project is forwarded from the option(s), encroachment into the waterway and the associated riparian habitat should be minimized to the extent practicable.

WILDLIFE RESOURCES

The most common forms of wildlife found on the developed lands in the area include species adapted to suburban life and some level of human disturbance as well as other species that make use of river and its riparian areas as permanent habitat and movement corridors. These include mule and white-tailed deer, small mammals (like coyote, red fox, squirrels, raccoons, skunks, beaver, mink), and a variety of rodents. Additionally, there are areas of winter range for elk, mule deer, and white-tailed deer located in the

mountains and foothills in the area. Other species like moose, black bear, and mountain lion may occasionally pass through the riparian corridors and forested lands in the area.

Numerous species of birds occur in this portion of the Missoula area including ospreys, sandhill cranes, wild turkey, ringed-neck pheasant, a variety of raptors (osprey, bald eagles, falcons, and hawks), owls, woodpeckers, migratory waterfowl, and many neo-tropical migratory birds (flycatchers, warblers, vireos, grosbeaks, and orioles).

Amphibians and reptiles occurring in the area include spotted frog, leopard frog, bull frog, western yellow-bellied racer, western garter snake, and western painted turtle.

AQUATIC RESOURCES

The major surface waters found within the area include the Bitterroot River, Clark Fork River, O'Brien Creek, and the Big Flat Ditch. All of these waters, except for the Big Flat Ditch, are managed as fisheries by the MFWP. The Bitterroot and Clark Fork Rivers have been rated as Outstanding for their fisheries resource value by MFWP. Both streams receive recreational angler use year-round for sport fishing although restrictions exist relative to fishing for certain species. O'Brien Creek has a Moderate rating for its fisheries resource value and is open to use by anglers on a seasonal basis.

According to maps developed by the USFWS, the Bitterroot and Clark Fork Rivers and O'Brien Creek are designated as Bull Trout Critical Habitat (BTCH).

3.4.4.2. Threatened and Endangered Wildlife Species

The federal list of endangered and threatened species is maintained by the USFWS. Species on this list receive protection under the Endangered Species Act (ESA). An 'endangered' species is one that is in danger of extinction throughout all of a significant portion of its range. A 'threatened' species is one that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. The USFWS also maintains a list of species that are candidates or proposed for possible addition to the federal list.

The endangered, threatened, proposed, and candidate species list for Montana Counties (March 2012) was obtained from the USFWS website. This list identifies the counties where one would reasonably expect the species to occur, not necessarily every county where the species is listed. In addition, the Wolverine was proposed for listing on February 4, 2013. **Table 5** shows the listed species that could potentially occur within Missoula County and provides information about habitats where these species typically occur.

Table 5: USFWS Endangered, Threatened, Proposed, and Candidate Wildlife Species

Common Name	Scientific Name	USFWS Status	Habitat Requirements
Bull Trout	<i>Salvelinus confluentus</i>	Threatened, Critical Habitat Designated	Bull trout are found in the Clark Fork and Flathead drainages of western Montana. Sub-adult and adult fluvial bull trout reside in larger streams and rivers and spawn in smaller tributary streams, whereas adfluvial bull trout reside in lakes and spawn in tributaries. Within the Maclay Bridge area, the Bitterroot River, Clark Fork River, and O'Brien Creek are designated as Critical Habitat for bull trout.
Grizzly Bear	<i>Ursus arctos horribilis</i>	Threatened	In Montana, Grizzly Bears primarily use meadows, seeps, riparian zones, mixed shrub fields, closed timber, open timber, sidehill parks, snow chutes, and alpine slabrock habitats. Grizzly bear habitat and recovery zones in Missoula County include the Seeley, Swan, and Jocko Valleys, lower Mission Valley, and portions of the upper Rattlesnake watershed.
Canada Lynx	<i>Lynx Canadensis</i>	Threatened, Critical Habitat Designated	West of the Divide, Canada Lynx generally occur in subalpine forests at elevations between 4,000 to 7,000 feet in stands composed of pure lodgepole pine but also mixed stands of fir, pine, larch, and hardwoods. Habitat for the species does not exist in the Maclay Bridge area.
Wolverine	<i>Gulo gulo luscus</i>	Proposed	Wolverines live in remote and inhospitable places away from human populations. In the northern Rocky Mountains, wolverines are restricted to high mountain environments near the treeline, where conditions are cold year-round and snow cover persists well into the month of May. Habitat for the species does not exist in the Maclay Bridge area.
Yellow Billed Cuckoo (Western Population)	<i>Coccyzus americanus</i>	Candidate	Western cuckoos breed in large blocks of riparian habitats, particularly woodlands with cottonwoods and willows. This candidate species requires patches of at least 25 acres of dense, riparian forest with a canopy cover. This habitat may be present in the Maclay Bridge area.

Source: USFWS, List of Endangered, Threatened, Proposed and Candidate Species Montana Counties.

An evaluation of potential impacts to all endangered, threatened, proposed, or candidate species will need to be completed during the project development process.

3.4.4.3. Montana Animal Species of Concern

Wildlife species of concern are native Montana animals that are considered to be “at risk” due to declining population trends, threats to their habitats, and/or restricted distribution. Designation of a species as a Montana Animal Species of Concern (or Potential Species of Concern) is not a statutory or regulatory classification. The designation as a Species of Concern provides a basis for resource managers and decision-makers to make proactive decisions regarding species conservation and data collection priorities. Each Species of Concern is assigned a state numeric rank ranging from S1 (highest risk, greatest concern) to S5 (demonstrably secure, least concern) reflecting the degree of risk to each species based on available information. Other state ranks applied to Species of Concern include: SU (unrankable due to insufficient information), SH (historically occurred), and SX (believed to be extinct). State ranks may be followed by modifiers, such as B (breeding), N (non-breeding), or M (migratory).

Table 6 lists the animal species of special concern by the Montana Heritage Program in the study area. The results of the data search reflect the current status of their data collection efforts. These results are not intended as a final statement on sensitive species within a given area, or as a substitute for on-site surveys. If a project is forwarded from the option(s), on-site surveys will need to be completed during the project development process.

Table 6: Montana Animal Species of Concern

Common Name	Scientific Name	State Rank	MNHP Known Occurrences in Maclay Bridge Area
Westslope Cutthroat Trout	<i>Oncorhynchus clarkia lewisi</i>	S2	Yes
Hoary Bat	<i>Lasluruscinereus</i>	S3	Yes
Fisher	<i>Martes pennanti</i>	S3	Possible on Lolo National Forest
Black-backed Woodpecker	<i>Picoides arcticus</i>	S3	Yes
Western Skink	<i>Eumeces skiltonianus</i>	S3	Yes
Fringed Myotis	<i>Myotis thysanodes</i>	S3	Yes
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	S3B	Yes
Cassin's Finch	<i>Carpodacus cassinii</i>	S3	Yes
Pileated Woodpecker	<i>Dryocopus pileatus</i>	S3	Yes
Lewis's Woodpecker	<i>Melanerpes lewis</i>	S2B	Yes
Flammulated Owl	<i>Otus flammeolus</i>	S3B	No
Bald Eagle	<i>Haliaeetus leucocephalus</i>		Yes
Great Blue Heron	<i>Ardea herodias</i>	S3	Yes

Source: Montana Natural Heritage Program, Animal and Plant Species of Concern Searchable Database.

3.4.4.4. Vegetation

This portion of the Missoula Valley contains isolated remnants of native vegetation. Areas of native dry grasslands, open ponderosa pine forest, and riparian deciduous forests and associated wetlands exist along the Bitterroot and Clark Fork Rivers. Vegetation in developed areas consists of ornamental trees and shrubs, lawns, and flowerbeds associated with residential landscapes. The area also contains areas of cultivated lands.

THREATENED AND ENDANGERED PLANT SPECIES

The online database of threatened, endangered, proposed, and candidate plant species maintained by the USFWS identifies two plants—Water Howellia and Whitebark Pine—as potentially occurring in Missoula County. Water Howellia is a threatened plant species and the Whitebark Pine is a candidate species for listing. **Table 7** presents habitat requirements for each of these species. Known occurrences and habitat requirements suggest these plants are unlikely to occur in the area.

Table 7: USFWS Endangered, Threatened, Proposed, and Candidate Plant Species

Common Name	Scientific Name	USFWS Status	Habitat Requirements
Water Howellia	<i>Howellia aquatica</i>	Threatened	Water howellia is a winter annual aquatic plant that grows in small, vernal, freshwater wetlands that have an annual cycle of filling up with water over the fall, winter and early spring, followed by drying during the summer. The wetlands typically consist of small shallow ponds within a matrix of forest vegetation and are usually bordered in part by deciduous trees. Known occurrences of the species in Montana are all within the Swan River drainage in the northeastern portion of Missoula County.
Whitebark Pine	<i>Pinus albiculis</i>	Candidate	Whitebark pine typically occurs in isolated stands on cold and windy high-elevation or high-latitude sites in western North America. This habitat does not exist in the Maclay Bridge area.

Source: USFWS, List of Endangered, Threatened, Proposed and Candidate Species Montana Counties.

As with listed wildlife species, consultation with the USFWS will be necessary and an evaluation of potential impacts to all listed, candidate, and proposed plant species must be completed if a project is forwarded.

PLANT SPECIES OF CONCERN

The file search of the MNHP database lists one plant species of concern—Toothcup (*Rotalamosior*)—in the area. Toothcup is a rare plant identified from only a limited number of wetland sites in western Montana.

The results of the MNHP database search are not intended as a final statement on sensitive species within a given area, or as a substitute for on-site surveys. If a project is forwarded, a determination will need to be made if there is a need for any on-site surveys for plant species of concern during the project development process.

NOXIOUS WEEDS

Noxious weeds degrade habitat, choke streams, crowd native plants, create fire hazards, poison and injure livestock and humans, and fouls recreation sites. Areas with a history of disturbance are at particular risk of weed encroachment. There are 32 noxious weeds in Montana, as designated by the Montana Statewide Noxious Weed List (effective April 15, 2008). According to the Montana Invaders Database, there are documented occurrences of 20 noxious weed species in Missoula County since 1875. The area will need to be surveyed for noxious weeds. County Weed Control Supervisors should be contacted regarding specific measures for weed control during project development.

3.4.5. CULTURAL AND ARCHAEOLOGICAL RESOURCES

Section 106 of the National Historic Preservation Act (36 CFR 800) establishes requirements for taking into account the effects of proposed Federal, Federally assisted or Federally licensed undertakings on any district, site, building, structure or object included in or eligible for inclusion in the National Register of Historic Places (NRHP).

A Cultural Resources Information System (CRIS) and Cultural Resources Annotated Bibliography (CRABS) file search was conducted for the area. The CRABS file search indicates 26 cultural resource surveys have been conducted on lands within or near the area between 1978 and 2010. The CRIS file search identified 28 recorded properties within the area including one National Register-listed site—the Fort Missoula Complex (24MO0266).

If a project is forwarded from the Planning Study, a cultural resource survey of the Area of Potential Effect (APE) for the project as specified in Section 106 of the National Historic Preservation Act would need to be conducted. Section 106 outlines a process to identify historic properties that could be affected by the undertaking, assess the effects of the project and investigate methods to avoid, minimize or mitigate any adverse effects on previously recorded and newly discovered historic or archaeological resources.

3.4.5.1. 4(f) Resources

A review was conducted to determine the presence of Section 4(f) properties along the corridor. Section 4(f) refers to the original section within the Department of Transportation Act of 1966 (49 U.S.C. 303), which sets the requirements for consideration of park and recreational lands, wildlife and waterfowl refuges, and historic sites in transportation project development. A table and graphic showing 4(f) resources is included in the Environmental Scan (**Appendix 2**). **Table 8** summarizes potential Section 4(f) resources found within the Maclay Bridge area.

Prior to approving a project that “uses” a Section 4(f) resource, FHWA must find that there is no prudent or feasible alternative that completely avoids 4(f) resources. “Use” can occur when land is permanently incorporated into a transportation facility or when there is a temporary occupancy of the land that is adverse to a 4(f) resource. Constructive “use” can also occur when a project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under 4(f) are “substantially impacted”.

Section 4(f) does not apply to projects that do not use federal transportation funding.

Table 8: Summary of Potential Section 4(f) Resources

Name	Type of 4(f) Resource	Comments /Location
Kelly Island FAS	Public Recreation Site	666-acres site located at confluence of Bitterroot and Clark Fork Rivers, owned and managed by MFWP
Rosecrest Park ^(a)	Greenway Park	9.6 acres located south Spurgin Road between Clement Road and 37th Avenue. Contains soft-surface non-motorized pathway. County ownership
Schmautz Park ^(a)	Neighborhood Park	4.2 acre, developed parcel (play equipment & picnic shelter) located north of North Avenue and west of 42nd Avenue. County ownership
Target Range School Playground Target Range School (24MO0589)	Neighborhood Park Historic School	10 acre area containing sports fields, basketball courts, and play equipment. Target Range School is listed on National Register.
Dinsmore River Four	Conservation Park	Bitterroot River island habitat located south of existing Maclay Bridge County ownership
Double R Acres	Conservation Park	Clark Fork River riparian habitat adjoining Kelly Island FAS. County ownership
O'Brien Cr. Meadows Common Area	Conservation Park	O'Brien Creek riparian area located near intersection of Big Flat Road and O'Brien Creek Road. County ownership. Identified in Missoula County Parks and Conservation Lands Plan (1997)
Capi Court Park ^(a)	Unimproved County Park	North of Spurgin Road and east of Sierra Drive
Five Valley Land Trust Conservation Easements	Wildlife Habitat/Public Use	Various locations along Bitterroot River
Lolo National Forest Lands	Public Multiple-use Property	Southwestern portion of Environmental Scan Area, part of Blue Mountain Recreation Area
Rice Property (24MO0517)	Historic Residence and Outbuildings	Consensus determination of eligibility for National Register
Maclay Property (24MO0519)	Historic Residence and Outbuildings	Recommended as eligible for National Register
Maclay Bridge (24MO0521)	Historic Vehicular/Foot Bridge	Determined eligible for National Register. Owned by Missoula County
Big Flat Ditch (24MO0587) Missoula Irrigation District Ditches (24MO0520)	Historic Irrigation Systems	Consensus determination of eligibility for National Register

Sources: 1) Montana Historical Society, CRIS File Search Results, 3/21/2102; 2) Missoula County Parks and Conservation Lands Plan, 1997.; 3) Missoula County, Final Draft Parks and Trails Master Plan, 2012.

(a) Capi Court, Rosecrest Park, and Schmautz Park are county parks that are the result of subdivision park and open spaces requirements from the Missoula County Subdivision Regulations, section 3-080.

3.4.5.2. 6(f) Resources

Section 6(f) of the Land and Water Conservation Fund Act (LWCF) (16USC, Section 4601 et. seq.) provides funds for buying or developing public use recreational lands through grants to local and state governments. Section 6(f)(3) of the Act prevents conversion of lands purchased or developed with LWCF funds to non-recreation uses, unless the Secretary of the Department of Interior (DOI), through the National Park Service (NPS), approves the conversion.

A review of the LWCF grants in Missoula County maintained by MFWP shows that Kelly Island Fishing Access Site (FAS) is the only property in the area acquired/improved under Section 6(f) of the LWCF.

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Chapter 4

NEEDS AND OBJECTIVES

Needs and objectives were derived based on a comprehensive review of existing data and input from resource agencies, stakeholders and the public and were used to develop options. The following needs and objectives reflect the existing social, environmental, and engineering conditions described in the Existing and Projected Conditions Report (**Appendix 3**) and recognize the local and regional use of the Maclay Bridge and the surrounding transportation system.

4.1. NEED NUMBER 1:

Improve the safety and operation of the river crossing and connecting roadway network.

The single-lane bridge on a two-way, two-lane roadway does not accommodate simultaneous travel in two directions. Several crash trends have been previously identified at the bridge or on roadways leading to the bridge. Trends relative to safety are caused by a variety of factors, including poor roadway alignment, inadequate sight distance, and illegally parked cars.

OBJECTIVES (TO THE EXTENT PRACTICABLE)

- Improve sub-standard elements of facilities to meet current applicable design standards.
- Reduce delay and vehicle restriction for emergency responders under existing and future traffic demands.
- Manage travel speeds and provide adequate clear zones to improve operations.

4.2. NEED NUMBER 2:

Provide a long-term river crossing and connecting roadway network that accommodates planned growth in the Maclay Bridge area.

The Maclay Bridge is used by local and regional travelers including pedestrians, bicyclists, emergency response providers, and school buses. Depending on future growth characteristics as depicted in local adopted planning documents, the Maclay Bridge will realize increased passenger and vehicular traffic.

OBJECTIVES (TO THE EXTENT PRACTICABLE)

- Accommodate existing and future capacity demands.
- Address non-motorized facilities consistent with local planning efforts.
- Provide connectivity to neighborhood residents, and regional users accessing recreational lands to the west of the Bitterroot River.

4.3. NEED NUMBER 3:

Minimize adverse impacts from options to the environmental, cultural, scenic and recreational characteristics of the study area.

The area around the Maclay Bridge provides access to residential, agricultural and recreational lands. Because of the location along the Bitterroot River, wildlife and aquatic connectivity are areas of concern. Improvements should be considered that provide both wildlife and aquatic connectivity. All improvements

should be reviewed for their potential impact to the environmental, scenic, cultural, recreational and agricultural aspects of the corridor.

OBJECTIVES (TO THE EXTENT PRACTICABLE)

- Minimize adverse impacts to the Bitterroot River from potential options.
- Minimize adverse impacts to the wildlife and aquatic organisms from potential options.
- Provide reasonable access to recreational sites in the study area (Kelly Island Fishing Access Site, Lolo National Forest, and Missoula County Parks).
- Avoid or otherwise minimize adverse impacts to historic, cultural, and archaeological resources that may result from implementation of options.

4.4. NEED NUMBER 4:

Minimize adverse impacts from options to the neighborhood characteristics of the study area.

OBJECTIVES (TO THE EXTENT PRACTICABLE)

- Implement improvements with special sensitivity to area schools.
- Minimize impacts to existing residents and businesses in the area.
- Recognize the historic value of the Maclay Bridge to the community and the role it plays in local regional events.

4.5. OTHER CONSIDERATIONS (TO THE EXTENT PRACTICABLE)

- Options should be sensitive to the availability of funding for recurring maintenance obligations or for the construction of new improvements.

The subject of parking, vandalism, illegal activity, and enforcement, along with perpetuating access to recreational sites directly adjacent to the Maclay Bridge, are areas of concern generally outside the scope of this Maclay Bridge Planning Study. However, they are areas of concern that have been documented and commented on by members of the public.

Chapter 5

OPTION IDENTIFICATION

5.1. OPTION IDENTIFICATION

A full range of options were developed for analysis based on the identified transportation system needs and objectives. The needs and objectives were developed through an evaluation of the information contained in the Existing and Projected Conditions Report (**Appendix 3**).

Broad categories of options are identified below. Each broad category has various types of options and is discussed in more detail later in this chapter:

- Option 1 – Improve Safety and Operations on the Existing Bridge
- Option 2 – Rehabilitate the Existing Bridge
- Option 3 – Build New Bridge
- Option 4 – Do Nothing

5.1.1. OPTION 1: IMPROVE SAFETY AND OPERATIONS ON THE EXISTING BRIDGE

A range of options were identified that would improve safety and operations at the Maclay Bridge. These options include enhancing traffic operations and safety on and near the existing bridge, and implementing new restrictions on the use of the bridge. These options would not change the alignment of the approaches to the existing structure or the roadways leading to the Maclay Bridge.

Under this option Missoula County would continue to perform routine maintenance activities on the existing bridge to keep the structure in service under its load limitation for use by local residents, school buses, and emergency service vehicles. Some sub-options include the bridge being removed, or left for non-motorized uses. In these cases maintenance may not be required with the same frequency as if the bridge was left in service for vehicular traffic.

5.1.1.1. Option 1A–Enhance Traffic Operations and Safety on and near the Existing Structure

This option would involve a variety of periodic maintenance activities to improve use for local residents, school buses, and emergency vehicles. There would be no changes to the configuration or alignment of the approaches to the existing structure or roadways within the area beyond the safety improvements currently being implemented by the County and MDT. To help manage traffic flows across the bridge, new metering devices would be installed along each approach to regulate traffic flows by direction and address vehicles having to back up so oncoming traffic can get off the bridge. This option would include street lighting at the westerly approach to the bridge, with appropriate signage on both ends to warn of the change in roadway alignment. Pedestrian and bicyclist travel through the area would continue to occur on the existing bridge and its adjoining roadways.

5.1.1.2. Option 1B–Maintain Current Usage and Add Pedestrian/Bicyclist Facilities

This option would construct separated pedestrian/bicyclist facilities in the vicinity of Maclay Bridge and make limited improvements for non-motorized users on the approaches to the bridge to enhance safety for non-motorized users. These limited improvements could consist of shoulder widening on River Pines Road, signing and striping on both sides of the bridge, and pavement markings. A new, separated non-motorized bridge would be necessary adjacent to the existing Maclay Bridge.

5.1.1.3. Option 1C–Implement Additional Restrictions on Bridge Use

This option would involve placing additional operational restrictions on the use of the Maclay Bridge. These restrictions may include measures such as:

- Restricting vehicle use of the structure to one travel direction (i.e. a one-way route);
- Further reducing travel speeds;
- Prohibition of use by all large trucks, school buses, and emergency vehicles; or
- Increased enforcement of parking ordinance (no tolerance policy).

There would be no changes to the alignment of the approaches or roadways within the area beyond the safety improvements currently being implemented by the County and MDT.

5.1.1.4. Option 1D–Close Bridge to Vehicles and Retain Use for Non-Motorized Travel Modes

This option would close the Maclay Bridge to vehicular traffic but allow the structure to remain in service as a river crossing for pedestrians and bicyclists and other non-motorized transportation modes. Vehicle access across the Bitterroot River would be accommodated by other existing bridges and roadways in the area (Kona Ranch Bridge via Mullen Road or Blue Mountain Road via US Highway 93). Further investment by the County in active transportation facilities in the Maclay Bridge area would likely be necessary on River Pines Road and North Avenue to provide system continuity.

The permanent closure of the bridge to vehicles would eliminate through traffic on North Avenue and River Pines Road and inconvenience local residents and visitors seeking recreational opportunities on nearby public lands.

5.1.1.5. Option 1E–Retain Bridge for Two-Way Travel and Provide New Bridge Elsewhere for Two-Way Travel

This option would involve keeping the existing bridge in service for vehicular traffic but providing another structure somewhere else in the area to help meet existing and projected travel demands. The new, 2-lane structure would provide for two-way travel; however the existing Maclay Bridge would remain as-is.

5.1.1.6. Option 1F– New One-Lane Bridge at a New Location & Retain Existing Bridge for Non-Motorized Uses

The concept of a new one-lane bridge at a South Avenue Extension was put forth by the public. The function of this bridge would be similar to that of the existing bridge on North Avenue, carrying two-way vehicular traffic across a new one-lane bridge at South Avenue. The existing Maclay Bridge could remain as an exclusive non-motorized facility.

5.1.1.7. Option 1G–New One-Lane Bridge at a New Location for One-Way Travel and Retain Existing Bridge for One-Way Travel

Building upon the concept described in **Section 5.1.1.6**, the concept of a “one-way” couplet of roadways was discussed. In this concept, the existing Maclay Bridge would remain and be used for one-way travel only (i.e. westbound or eastbound travel only). In addition, a new single lane bridge at the extension of South Avenue would also be used for one-way travel (in the opposite direction from that of the existing Maclay Bridge).

5.1.1.8. Option 1H–Close Bridge and Remove Structure

This concept involves closing the Maclay Bridge and removing the structure. No replacement bridge would be provided in the area. With no river crossing in the vicinity of the Maclay Bridge, vehicles which currently use the bridge would be required to divert to Blue Mountain Road and US Highway 93 or to Mullan Road using the Kona Ranch Bridge. This would require roadway closures with barricades and the provision of adequate turnaround areas for vehicles near the ends of the existing bridge. Utilities installed on the bridge would need to be relocated. The river crossing would no longer be available to users of non-motorized transportation modes. The existing Maclay Bridge easement area, particularly the area east of bridge, offers potential for providing parking area and enhancing river access.

The permanent closure of the bridge would eliminate through traffic on North Avenue and River Pines Road and inconvenience local residents and visitors seeking recreational opportunities on nearby public lands.

5.1.2. OPTION 2: REHABILITATE THE EXISTING BRIDGE

Rehabilitation options were developed that include both the structure only and also the structure with approach work. Rehabilitation does not address the functionally obsolete or fracture critical status of the existing structure.

5.1.2.1. Option 2A–Minor Rehabilitation (Structure Only)

The goal of a minor rehabilitation would be to extend the life of the bridge by performing minor upgrades and repairing deterioration and damage. Ongoing inspections and related maintenance activities would still be needed. Missoula County would continue to perform routine maintenance activities to keep the structure in service under its load limitation for use by local residents, school buses and emergency service vehicles. With repair and maintenance the bridge life could be extended depending on the rate of deterioration, aggressiveness of ongoing repair and maintenance work, and barring major damage from flooding and/or vehicles. It would not eliminate inherent safety concerns. The context and frequency of maintenance and repair activities would probably increase over time. An engineering analysis may be appropriate to better understand the ability of the bridge to pass flood events. Minor rehabilitation would typically include rehabilitation work tasks such as:

- Tighten and/or replace loose bolts;
- Spot painting of structural steel;
- Upgrade bearings and expansion devices;
- Crack sealing of asphalt surfacing to prolong surface;
- Minor repairs and upgrades to the truss and floor system to increase load capacity;
- Patch deteriorated or spalled concrete; and/or
- Safety improvements such as adding a pedestrian rail.

Minor rehabilitation work is not a “one time only” application. Minor rehabilitation activities may be required on a frequency of every two-to-three years over the life of the bridge. Rehabilitation efforts on the existing bridge have been performed at least four times over the last 18 years (April, 1997 and during the summers of 2003, 2004 and 2005 – see Existing and Projected Conditions Report [**Appendix 3**]).

With minor rehabilitation, the posted vehicle weight limit restriction could be increased from the current 11 tons to around 13 tons.

5.1.2.2. Option 2B–Major Rehabilitation (Structure Only)

The goal of a major rehabilitation would be to extend the life of the bridge to something similar to that of a new bridge. The scope of the rehabilitation would require an in-depth engineering study. Major rehabilitation work could allow the bridge to handle full legal loads so there would be no need for a load posting. Like minor rehabilitation, ongoing inspections and related maintenance activities would still be needed. This option requires a long term financial commitment to the existing bridge due to the increase in life span. The ultimate life span of the bridge would be dependent on the rate of deterioration, aggressiveness of ongoing repair and maintenance work, and barring major damage from flooding and/or vehicles. A major rehabilitation does not eliminate the necessity for periodic maintenance.

Since the extent of the needed rehabilitation is unknown, major rehabilitation work requires an engineering study of the truss, floor system, abutments, and piers. This typically requires more engineering development time. The cost of a major rehabilitation can be similar to the cost of a new bridge.

Major rehabilitation of the existing bridge to attain longer life and higher load ratings would likely consist of the following specific work features:

- Sand blast rusted steel members and re-paint as needed;
- Replace steel stringers and floor beams as determined necessary;
- Upgrade truss members as determined necessary;
- Evaluate abutments and piers for repair or replacement;
- Replace bearing devices; and/or
- Replace the short span pony truss with a new one lane truss.

Rehabilitating the main truss would likely require removing the main truss from the river, rebuilding or repairing offsite and installation. With major rehabilitation, the posted vehicle weight limit restriction could be increased from the current 11 tons to around 25 tons.

5.1.2.3. Option 2C–Minor Rehabilitation (includes Approaches)

This option is similar in scope to option 2A for the existing structure and also includes modifications to the bridge approaches to bring them up to current standards. Similar to the North 1 option described later in this chapter, approach alignment work would begin on North Avenue at its intersection with Edward Avenue. The alignment of River Pines Road west of the river would be improved to eliminate the 90-degree curve at the west end of the existing bridge and would extend beyond the west end of the current bridge.

5.1.2.4. Option 2D–Major Rehabilitation (includes Approaches)

This option is similar in scope to option 2B for the existing structure and also includes modifications to the bridge approaches to bring them up to current standards. Similar to the North 1 option described later in this chapter, approach alignment work would begin on North Avenue at its intersection with Edward Avenue. The alignment of River Pines Road west of the river would be improved to eliminate the 90-degree curve at the west end of the existing bridge and would extend beyond the west end of the current bridge.

5.1.3. OPTION 3: BUILD NEW BRIDGE

Options for a new bridge and associated roadway were identified at 14 possible locations. The locations were selected based on their inclusion in the previous Environmental Assessment (1994) and a field and aerial mapping review of other possible locations. Details on the possible length and width of the new bridges and corresponding roadways were assumed as part of the screening process for cost estimating purposes (**Appendix 3, Screening Assessment Memorandum**), however exact configurations are design level details that would be decided during preliminary engineering and environmental document development. Any new bridge would need to meet current design standards in place and recognized by the participating agencies. Depending on mitigation requirements resulting from the permitting process for a new bridge, Missoula County may have to make decisions relative to the long-term use of the structure. An example is if a new bridge was built at a new location and the permitting process does not dictate the removal of the existing Maclay Bridge, Missoula County would have to decide whether to remove the structure or allow it to remain for non-vehicular uses.

5.1.3.1. Option 3A - At North Avenue

Option 3A includes options to build a new structure at or near the existing North Avenue alignment.

5.1.3.1.1. Build on Existing Alignment

OPTION 3A.1 - BUILD ON EXISTING ALIGNMENT

One option for a replacement bridge would be to rebuild a 2-lane bridge on the present alignment. This option would not change the alignment of the approaches to the existing structure or the roadways leading to the Maclay Bridge. This option is for the construction of a new bridge at the present location of the existing bridge, with minimal roadway work.

5.1.3.1.2. Build near Existing Alignment

OPTION 3A.2 - NORTH 1 ALIGNMENT

This option provides a new bridge parallel to and just upstream from the existing Maclay Bridge. The alignment begins on North Avenue at its intersection with Edward Avenue. The alignment of River Pines Road west of the river would be improved to eliminate the 90-degree curve at the west end of the existing bridge. Approach work on the west side of the river would extend beyond the west end of the current bridge. This option would require the removal of the existing structure.

OPTION 3A.3 - NORTH 2 ALIGNMENT

This alignment extends North Avenue due west from Edward Avenue to River Pines Road about 825' southwest of the existing Maclay Bridge. The alignment would cross the island in the Bitterroot River just upstream from the existing bridge.

5.1.3.2. Option 3B - At a New Location

A total of 16 alternatives were considered in the 1994 EA for the *Maclay Bridge Site Selection Study* which included 13 locations for a bridge on a new alignment in the general area. The new bridge locations and associated alignments considered included:

- An alignment extending South 3rd Avenue across the river;
- An alignment extending Spurgin Road across the river;
- 2 alignments extending Mount Avenue across the river;
- 2 alignments extending Edwards Avenue across the river;
- 2 alignments along North Avenue near the existing bridge (described earlier in section 5.1.3.1.2);
- 2 alignments extending South Avenue across the river;

- 2 alignments extending Sundown Road across the river; and
- An alignment extending Humble Road across the river to Blue Mountain Road.

Figure 4 shows the locations of the alignments considered in the 1994 EA.



Figure 4: Bridge Alignments Considered in 1994 EA

The graphics from the 1994 EA illustrating these potential alignments were schematic in nature and were intended to illustrate the location concepts for a new bridge and roadway connections. The bridge alignments described in the 1994 EA are discussed in the following sections.

5.1.3.2.1. Build Bridge on Northern Alignment

OPTION 3B.1 - SOUTH 3RD STREET WEST EXTENSION

This potential alignment extends from the intersection of South 3rd Street West and Clements Road west towards the Clark Fork River and continues southwesterly along the Clark Fork before turning to the south near the intersection of South 7th Street West and Humble Road. From this point, the alignment continues southwesterly across Spurgin Road and follows a tangent (straight) alignment across the Bitterroot River to end at the River Pines Road/O'Brien Creek Road/Big Flat Road/Blue Mountain Road intersection.

OPTION 3B.2 - SPURGIN ROAD EXTENSION

This alignment begins near the intersection of Spurgin Road and Sierra Drive. After a long horizontal curve, the alignment continues southwesterly through agricultural lands before crossing the Bitterroot

River on a tangent (straight) alignment that ends at the River Pines Road/O'Brien Creek Road/Big Flat Road/Blue Mountain Road intersection. This option would follow the same alignment as the South 3rd Street West alignment at the river crossing and west of river.

5.1.3.2.2. Build Bridge on Mount Avenue Alignment

OPTION 3C.1 - MOUNT 1

This alignment begins near the intersection of Mount Avenue and Humble Road and continues west across the Bitterroot River. After crossing the river, this option follows a tangent alignment and ends at the River Pines Road/O'Brien Creek Road/Big Flat Road/Blue Mountain Road intersection.

OPTION 3C.2 - MOUNT 2

This alignment begins at the same location as the Mount 1 alignment. However, the proposed alignment immediately proceeds in a southwesterly direction alternative across the Bitterroot River and joins River Pines Road at the west end of the existing Maclay Bridge.

5.1.3.2.3. Build Bridge on Edward Avenue Alignment

OPTION 3D.1 - EDWARD 1

This alignment option begins near the intersection of Edwards Avenue and Humble Road and proceeds westerly across the Bitterroot River before turning southwesterly and continuing to the intersection of River Pines Road/O'Brien Creek Road/Big Flat Road/Blue Mountain Road.

OPTION 3D.2 - EDWARD 2

This alignment starts near the intersection of Edwards Avenue and Humble Road. After proceeding westerly for a short distance along an extension of Edwards Avenue, the alignment quickly transitions to a southwesterly direction across the Bitterroot River and joins River Pines Road at the west end of the existing Maclay Bridge.

5.1.3.2.4. Build Bridge on South Avenue Alignment

OPTION 3E.1 - SOUTH 1

This alignment involves extending South Avenue in a northwesterly direction across the Bitterroot River to join with River Pines Road. This alignment begins on South Avenue west of Hanson Drive (the current terminus) and continues northwesterly to join River Pines Road about 0.2 miles east of the River Pines Road/O'Brien Creek Road/Big Flat Road/Blue Mountain Road intersection.

OPTION 3E.2 - SOUTH 2

This alignment would extend from South Avenue west of Hanson Drive (the current terminus) due west across the Bitterroot River to meet Blue Mountain Road at a location about 600 feet southeast of the River Pines Road/O'Brien Creek Road/Big Flat Road/Blue Mountain Road intersection.

5.1.3.2.5. Build Bridge on Sundown Road Alignment

OPTION 3F.1 - SUNDOWN 1

This alignment begins at the existing western terminus of Sundown Road and extends northwesterly across the Bitterroot River to join Blue Mountain Road at the sharp curve located about 0.25 miles southeast of the River Pines Road/O'Brien Creek Road/Big Flat Road/Blue Mountain Road intersection.

OPTION 3F.2 - SUNDOWN 2

This alignment begins at the existing western terminus of Sundown Road and extends due west across the river to meet Blue Mountain Road at a location about 0.43 miles south of the River Pines Road/O'Brien Creek Road/Big Flat Road/Blue Mountain Road intersection.

5.1.3.2.6. Build Bridge on Southern Alignment

OPTION 3G.1 - HUMBLE ROAD-BLUE MOUNTAIN ROAD

This alignment option begins at the current western terminus of Humble Road and continues west and south to cross the Bitterroot River to Maclay Flats. From that point, the alignment extends southeasterly across Maclay Flats before turning south to join a north-south section of Blue Mountain Road. The southern end of the alignment is located about 0.78 miles from the intersection of Blue Mountain Road and US Highway 93.

5.1.3.2.7. New Bridge at a New Location Not Identified in the 1994 EA

OPTION 3H.1 – NEW LOCATION NOT IDENTIFIED IN THE 1994 EA

The study area was examined to determine if another, more suitable location could be identified for a new bridge crossing at a location other than those identified in the 1994 EA. It was concluded that no such location existed, and that those alignments identified in the original 1994 EA represented the complete array of possible new bridge locations. The alignments in the 1994 EA were determined to represent the complete array of practicable locations for a new bridge crossing.

5.1.4. OPTION 4: DO NOTHING

5.1.4.1. Option 4A–Do Nothing

This option represents the current situation for the Maclay Bridge and its surroundings. The bridge would remain in its present configuration and traffic operations at and near the Maclay Bridge would be unchanged. Missoula County would continue to perform routine maintenance activities to keep the structure in service under its load limitation (11 tons). There would be no changes to the configuration or alignment of the approaches to the existing structure or roadways within the area beyond the safety improvements currently being implemented by the County and MDT. Pedestrian and bicyclist travel through the area would continue to occur on the existing roadway or other facilities in the Maclay Bridge area.

Chapter 6

OPTIONS CARRIED FORWARD

6.1. OPTION SCREENING

Screening is used to describe the process for reviewing a range of conceptual options or strategies and determining which ones to carry forward for more evaluation and study. The primary function of screening is to determine feasible and practicable options that address the identified needs and objectives.

Items or considerations used to evaluate options are referred to as screening criteria. Screening may be carried out through one or more iterations (levels) with the screening criteria for each level becoming more specific. Screening may rely upon qualitative or quantitative screening criteria. Qualitative criteria refer to subjective evaluations often based on ratings (yes/no, excellent to poor, high to low, or pass/fail). Quantitative criteria refer to items that can be readily calculated or quantified through analysis like construction costs, right-of-way needs/relocations, or general areas of impact.

The *Maclay Bridge Planning Study* utilized a first and second level screening process. The first level screening was used to identify options that fail to meet the critical aspects of the study's needs and objectives or that may have had "fatal flaws" with respect to other key factors (i.e. a potential option may consist of a new roadway alignment that traverses directly through a conservation easement that is prohibited from development of any type). The first level screening provided an initial evaluation of a wide range of potential options or strategies. The results of the first level screening narrowed the set of options or strategies to those with the greatest capacity to address identified areas of concern and satisfy the study needs and objectives.

The second level screening built upon the first level screening by taking the options that were carried forward from the first level and performing an evaluation against certain needs and objectives. The second level screening was more extensive in that more elements based on parameters such as cost, traffic, environmental impacts, etc., were used to screen the options.

6.1.1. FIRST LEVEL SCREENING

The first level screening criteria consisted of two questions to establish how well potential options met basic safety performance and connectivity needs as follows:

- *Would the option improve safety on the bridge and its approaches?*
- *Does the option provide an efficient connection with the street network/road system in the area?*

The first level screening assessment allowed for a simple YES or NO answer to the two questions. The analysis was qualitative and intended to identify options that complied with the identified needs and objectives. Options not meeting the identified needs and objectives as determined thru this first level screening were eliminated in accordance with 23 CFR, which allows for the elimination of alternatives from further consideration due to lack of demonstration of meeting needs and objectives.

Table 9 summarizes the first level screening criteria, identifies why they are important screening considerations, and relates each consideration to a specific identified need for the planning study. To advance to the second screening level, an option had to receive a 'YES' answer to the screening questions indicating the fundamental safety and connectivity needs required to serve the overall transportation system would be met.

Table 9: First Level Screening – General Compliance with Identified Needs/Objectives

Screening Assessment	Screening Question	Correlation to Need
SAFETY PERFORMANCE. This criterion screens against the option's potential to improve the overall safety performance on the bridge and its approaches.	Q1. Would the option improve safety on the bridge and its approaches?	NEED #1
CONNECTIVITY. This criterion screens against whether or not the option provides an efficient connection to the transportation network within the area.	Q2. Does the option provide an efficient connection with the street network/road system in the area?	NEED #2

6.1.1.1. First Level Screening Questions

6.1.1.1.1. Safety Performance

This criterion screened against an option's potential to improve the overall safety performance on the bridge and its approaches by implementing measures to address identified deficiencies or safety concerns. The Existing and Projected Conditions Report highlighted a variety of safety concerns associated with the existing bridge, including substandard horizontal curves and the presence of unshielded obstacles and/or non-recoverable slopes on its approaches. The crash analysis conducted for this study identified several crash clusters on the road network in the Maclay Bridge area and highlighted common contributing circumstances at each location. For purposes of first level screening, safety related to motorized uses such as vehicular traffic, motorcycles, and emergency response vehicles. It also relates to non-motorized users such as bicyclists and pedestrians. Although some public comments have correlated safety to recreational use of the river and its banks, these were not explicitly tied to the features of the transportation system that can be documented and addressed through this planning study (i.e. geometrics, clear zones, travel speeds, etc.) and are therefore not considered in the screening process.

The following screening question, which relates directly to Need Number 1, was asked:

Q1. WOULD THE OPTION IMPROVE SAFETY ON THE BRIDGE AND ITS APPROACHES?

To receive a YES answer to this question, options should address identified safety deficiencies and improve or correct sub-standard elements of the bridge and its approaches that pose safety concerns for the traveling public. It was assumed that options providing bridges on new locations would be engineered to design standards that would provide a desirable level of safety. Several questions inherent to improving safety were explored during the screening process. These questions determined whether question 1 received a YES or NO response. The sub-questions included the following:

- ***Would the option improve sub-standard elements [deficiencies] on the bridge?*** Sub-standard elements of the bridge include the bridge deck width and load-restricted condition. Options that would rectify or improve these conditions are considered desirable. The Existing and Projected Conditions Report (**Appendix 3**) contains additional information on existing bridge deficiencies.
- ***Would the option reduce or remove vehicle restrictions on the bridge?*** Vehicle restrictions on the bridge presently include a posted load limit of 11 tons, one direction of travel at a time, and speed restrictions for larger emergency vehicles and school buses. Options that would eliminate the vehicle restrictions on the bridge are considered desirable.
- ***Would the option reduce crashes resulting from approaches to the bridge?*** Deficiencies on the approaches include roadway areas with sub-standard horizontal alignment, lack of roadway shoulders, steep roadside slopes, obstructions in the clear zone, and lack of lighting. Crash clusters have been identified and documented previously. Improvements to the bridge's approaches to meet current design standards are considered desirable and a positive step to reduce identified crash trends.

6.1.1.1.2. Connectivity Considerations

This screening criterion addressed whether or not the option provided an efficient connection to the existing and/or future road network within the area. Roadway connections that enhance the ability of the network to serve users and accommodate efficient travel through the community are desirable. The following screening question, which relates directly to Need Number 2, was asked:

Q2. DOES THE OPTION PROVIDE AN EFFICIENT CONNECTION WITH THE STREET NETWORK/ROAD SYSTEM IN THE AREA?

Options that provide linkages to roadways with higher functional classifications (minor arterials, urban collectors, or rural major collectors) merited a YES response. A grid system of roadways is desirable, and the hierarchy of roadways in Missoula County encourages travel connectivity to reduce travel time and emissions, while recognizing access needs vary between different users. Options that provided undesirable system linkages or result in long, out-of-direction travel to make network connections were given a NO response.

6.1.1.2. Options Carried Forward from First Level Screening

Seven options were carried forward as a result of the first level screening process (summarized in **Table 10** on the following page). All of the options considered during the first level screening process are discussed in more detail in **Chapter 5**. Detailed information on the first level screening assessment and results can be found in the Screening Assessment Memorandum contained in **Appendix 3**. The options that were carried forward for the second level screening are listed below.

- Option 1G: New One-Lane Bridge at a New Location for One-Way Travel and Retain Existing Bridge for One-Way Travel
- Option 2C: Minor Rehabilitation (includes Approaches)
- Option 2D: Major Rehabilitation (includes Approaches)
- Option 3A.2: Build Near Existing Alignment - North 1 Alignment
- Option 3C.2: Build Bridge on Mount Avenue - Mount 2 Alignment
- Option 3E.1: Build Bridge on South Avenue - South 1 Alignment
- Option 3E.2: Build Bridge on South Avenue - South 2 Alignment

Option 1A – Enhance Traffic Operations and Safety on and Near the Structure was removed from further screening after the completion of the first level screen. This was based on the option being primarily a “traffic management system (TSM)” strategy that could be applied as a component of all the other options being considered. In other words, as a TSM option, the scope of improvements are relatively minor in nature and are intended to provide subtle improvements to the transportation system that include signing, lighting, pavement markings, etc. These small scale improvements could be considered with any remaining options going forward.

Table 10: First Level Screening Results

	<i>Q1. Would the option improve safety on the bridge and its approaches ?</i>	<i>Q2. Would the option provide an efficient connection with the street network/road system in the area?</i>	<i>ADVANCE TO SECOND LEVEL SCREENING? (See Note 1)</i>
RANGE OF OPTIONS CONSIDERED			
1A (Enhance Operations and Safety on or near Bridge)	REMOVED FROM FURTHER SCREENING		
1B (Maintain Vehicle Use & Add Ped/Bike Facility)	NO	YES	NO
1C (Add More Restrictions)	NO	YES	NO
1D (Close Bridge Use for Ped/Bike)	YES	NO	NO
1E (Retain & Add New Bridge)	NO	YES	NO
1F (Add New 1 – Lane Bridge / Retain Old for Ped/Bike)	NO	YES	NO
1G (Add New 1 – Lane Bridge / Retain Old for 1-Way)	YES	YES	YES
1H (Close & Remove Bridge)	YES	NO	NO
2A (Minor Rehab -Structure Only)	NO	YES	NO
2B (Major Rehab -Structure Only)	NO	YES	NO
2C (Minor Rehab -Includes Approaches)	YES	YES	YES
2D (Major Rehab -Includes Approaches)	YES	YES	YES
3A.1 (Exist Location)	NO	YES	NO
3A.2 (North 1)	YES	YES	YES
3A.3 (North 2)	NO	YES	NO
3B.1 (S 3rd St W)	YES	NO	NO
3B.2 (Spurgin Rd)	YES	NO	NO
3C.1 (Mount 1)	YES	NO	NO
3C.2 (Mount 2)	YES	YES	YES
3D.1 (Edward 1)	YES	NO	NO
3D.2 (Edward 2)	YES	NO	NO
3E.1 (South 1)	YES	YES	YES
3E.2 (South 2)	YES	YES	YES
3F.1 (Sundown 1)	YES	NO	NO
3F.2 (Sundown 2)	YES	NO	NO
3G.1 (Humble Rd – Blue Mtn Rd)	YES	NO	NO
3H.1 (Other Locations)	YES	NO	NO
4A (Do Nothing)	NO	YES	NO

NOTE 1: To advance to second level screening, option must rate YES for both screening criteria.

6.1.2. SECOND LEVEL SCREENING

Second level screening criteria were developed to evaluate and rank the seven options carried forward from the first level screening process. The criteria were generated to correlate to the identified needs and objectives previously articulated. Care was exercised to develop criteria that could be evaluated given the limited amount of information available and presented in the E&P Report (**Appendix 3**). For example, developing a criterion that quantifies “acreage of potential wetland impacts” is only relevant if wetland delineations have occurred and the locations of wetlands are known. For the second level screening process, sixteen screening criteria were developed to evaluate and rank options. The criteria are listed in **Table 11**, and fall under the following major types:

- Operational and Safety Screening Criteria (4 Total)
- Connectivity and Growth (3 Total)
- Constructability and Cost Screening Criteria (2 Total)
- Resource Impacts Screening Criteria (3 Total)
- Neighborhood/Social Screening Criteria (4 Total)

Table 11 summarizes the second level screening criteria, identifies why they are important screening considerations, and relates each consideration to a specific identified need for this planning study.

Table 11: Second Level Screening – General Compliance with Identified Needs/Objectives

Screening Consideration	Reason and Support for Screening Consideration	Relates to Need #?
OPERATIONAL AND SAFETY SCREENING CRITERIA		
OS1. Would the option improve sub-standard elements on the bridge?	SAFETY & OPERATIONS. This criterion determines the option's potential to address the substandard elements found on the bridge. A major substandard element of the existing bridge is the bridge deck width, which results in only one travel lane being available.	NEED #1
OS2. Would the option improve vehicle load restrictions on the bridge?	SAFETY & OPERATIONS. This criterion determines whether or not the option improves or resolves load restrictions on vehicle use of the bridge. The existing bridge has a posted load limit of 11 tons, which prohibits some vehicles from crossing the bridge and requires restrictions on others.	NEED #1
OS3. Would the option accommodate bicyclists/pedestrians on the bridge and its approaches?	CONNECTIVITY & GROWTH. This criterion indicates whether or not the option accommodates bicyclists and pedestrians on the bridge and its approaches. Safe bicycle and pedestrian facilities implies a space for bicyclist or pedestrian use.	NEED #2
OS4. Would the option reduce crashes resulting from approaches to the bridge?	SAFETY & OPERATIONS. This criterion indicates whether or not the option would reduce crashes on the approaches to the bridge. A review of the crash history on area roadways shows substandard elements (deficiencies) on approaches contribute to the crashes. These substandard elements include horizontal alignment concerns, lack of road shoulders, steep roadside slopes, obstructions in clear zone, lack of lighting.	NEED #1
OS5. Would the option accommodate future capacity demands?	CONNECTIVITY & GROWTH. This criterion determines whether or not the option would accommodate future capacity demands. Future capacity demands include things like providing a roadway wide enough for simultaneous bi-direction travel, and offering a crossing without limitations or restrictions due to horizontal and vertical clearances.	NEED #2
OS6. Would the option help reduce or eliminate vehicle delays at the river crossing?	SAFETY & OPERATIONS. This criterion determines whether or not the option would reduce or eliminate vehicle delays at the river crossing. The current bridge allows for traffic to cross the structure in one direction at a time. This delays vehicles waiting to cross in the opposing direction. These vehicles may occasionally include emergency responders.	NEED #1

Screening Consideration	Reason and Support for Screening Consideration	Relates to Need #?
OS7. Does the option provide an efficient grid connection to the major road/street network in the Missoula area?	CONNECTIVITY & GROWTH. This criterion indicates whether or not the option would provide an efficient grid connection to the major road/street network in the Missoula area by measuring the total length of travel between two points (in both directions). An efficient connection to an established grid network is an important consideration of the transportation system in terms of reducing out-of-direction travel, thus reducing travel time, travel costs, and controlling emissions.	NEED #2
CONSTRUCTABILITY AND COST SCREENING CRITERIA		
CC1. Planning level construction costs.	COST. This criterion details the option's high level planning costs to provide a reasonable measure of costs for comparison. Does not include highly variable costs like those associated with right-of-way acquisition, project development activities, environmental mitigation, or inflation.	N/A
CC2. Annual maintenance costs.	COST. This criterion is intended to provide some indication of annual maintenance costs for each option, over a 20-year horizon.	N/A
RESOURCE IMPACTS SCREENING CRITERIA		
R 1. Effects on aquatic resources?	ENVIRONMENTAL IMPACTS. This criterion differentiates between options based on their potential effects to aquatic resources by considering the extent of work in the delineated floodplain.	NEED #3
R 2. Will the options have impacts to protected 4 (f) or Section 106 resources?	SECTION 4(f) IMPACTS. This criterion determines whether the options have the potential for impacting resources that are protected by Section 4(f) or fall under Section 106 of the National Historic Preservation Act (36 CFR 800).	NEED #3
R 3. Will the options affect lands held under conservation easements?	LAND IMPACTS. This criterion determines whether the options have potential to affect lands held under conservation easements, and would require crossing those lands. Sizable areas of private land along the Bitterroot River are held under conservation easements by the Five Valleys Land Trust. Such easements may limit the ability to construct improvements on these protected lands.	NEED #3
NEIGHBORHOOD/SOCIAL SCREENING CRITERIA		
NS1. Number of privately owned parcels Impacted?	NEIGHBORHOOD & SOCIAL. This criterion assesses how many individual privately-owned parcels would be crossed or potentially impacted by the alignment associated with each option. The criterion is suggestive of the potential extent of R/W acquisition associated with each option.	NEED #4
NS2. Number of structures impacted?	NEIGHBORHOOD & SOCIAL. This criterion identifies whether or not structures may be impacted by each option. For purposes of this criterion, structures only consist of residences. Impacts to existing structures helps assess the potential for relocations or right-of-way impact mitigations associated with the options.	NEED #4
NS3. R/W needs?	NEIGHBORHOOD & SOCIAL. This criterion estimates how much new right-of-way may be required with each option. An assumed new right-of-way width was chosen for the option's alignments, and any known existing right-of-way is subtracted out, yielding a potential new right-of-way need.	NEED #4
NS4. Does the option compare favorably with year 2040 "no action" model traffic volume increases in front of Target Range School?	NEIGHBORHOOD & SOCIAL. This criterion measures the potential for traffic volume changes in front of the Target Range School.	NEED #4

6.1.2.1. Second Level Screening Questions

6.1.2.1.1. OS1 – Would the Option Improve Sub-Standard Elements on the Bridge?

A major substandard element of the existing bridge is the bridge deck width, which results in only one travel lane being available. This screening criterion determined the option's potential to address the substandard elements found on the bridge. The 2011 Bridge Inspection Report and the public listed other areas of concern as contained in the Existing and Projected Conditions Report (pages 26-30). Any option that resulted in two lanes (one lane for each direction) on the bridge would meet current design standards and would therefore not exhibit sub-standard elements, meriting a YES response. Other options that retain a one-lane configuration or do not provide additional bridge width would not rectify the substandard bridge condition and would receive a NO answer.

6.1.2.1.2. OS2 – Would the Option Improve Vehicle Load Restrictions on the Bridge?

This screening criterion determined whether or not the option improved or resolved load restrictions on vehicle use of the bridge. The existing bridge has a posted load limit of 11 tons. Inherent to the load restrictions, there are also speed restrictions in place for some of the larger vehicles using the bridge, such as emergency vehicles and school buses (note that these vehicles must also travel in the center of the bridge deck as they cross). Options that could eliminate or improve the existing load restriction up to at least a 25-ton-limit merited a YES answer. Those options that resulted in something less than at least a 25-ton-limit merit a NO answer.

6.1.2.1.3. OS3 – Would the Option Accommodate Bicyclists/Pedestrians on the Bridge and its Approaches?

This screening criterion indicated whether or not the option accommodated bicyclists and pedestrians on the bridge and its approaches. Safe bicycle and pedestrian facilities implies a space for bicyclist or pedestrian use. Exact widths and types of space are unknown, as this is a design-level detail. However whether or not an option can provide bicycle/pedestrian mobility can be reasonably estimated for the options. Options that could provide space for bicycle and pedestrian travel merited a YES answer. Those options that would not allow for provision of space for bicycle and pedestrian merited a NO answer. If an option could provide space on the approaches, but not across the bridge, a NO response was given, as that scenario results in a discontinuous facility for non-motorized use. New structures could be designed to provide space for bicycle and pedestrians.

6.1.2.1.4. OS4 – Would the Option Reduce Crashes Resulting from Approaches to the Bridge?

This screening criterion indicated whether or not the option would reduce crashes on the approaches to the bridge. A review of the crash history on area roadways shows substandard elements (deficiencies) on approaches contribute to the crashes. These substandard elements include horizontal alignment concerns, lack of road shoulders, steep roadside slopes, obstructions in clear zone, lack of lighting. Options that could reduce crashes resulting on approaches to the bridge, whether existing or new, merited a YES answer. Those options that would not reduce crashes on approaches to the bridge merited a NO answer.

6.1.2.1.5. OS5 – Would the Option Accommodate Future Capacity Demands?

This screening criterion determined whether or not the option would accommodate future capacity demands. Future capacity demands include things like providing a roadway wide enough for simultaneous bi-direction travel, and offering a crossing without limitations or restrictions due to horizontal and vertical clearances. The idea is to provide a facility that will readily accommodate increasing traffic demands due to area growth over the next 20-plus years. Providing sufficient capacity is important to the development of an efficient future transportation network in Missoula area. Options that

would accommodate future capacity demands on the bridge merited a YES answer. Those options that would maintain the status quo, or would not accommodate future capacity demands, merited a NO answer.

6.1.2.1.6. OS6 – Would the Option Help Reduce or Eliminate Vehicle Delays at the River Crossing?

This screening criterion determined whether or not the option would reduce or eliminate vehicle delays at the river crossing. The current bridge allows for traffic to cross the structure in one direction at a time. This delays vehicles waiting to cross in the opposing direction. These vehicles may occasionally include emergency responders. Options that provide a new bridge crossing with two lanes would reduce or eliminate vehicle delays, and merited a YES answer. Those options that would retain the one-lane, two-way bridge, or consist of two one-way bridges (existing bridge and new location), would not reduce or eliminate vehicle delays and merited a NO answer.

6.1.2.1.7. OS7 – Does the Option Provide an Efficient Grid Connection to the Major Road / Street Network in the Missoula Area?

This screening criterion indicates whether or not the option would provide an efficient grid connection to the major road/street network in the Missoula area by measuring the total length of travel between two points (in both directions). The length of travel between the intersections of South Avenue/Clements Road and Big Flat Road/ River Pines Road/Blue Mountain Road/O'Brien Creek Road was measured. This screening consideration determines whether the option provides a relatively direct linkage to the roadway grid system, and whether the length of travel with each option is less or more, for comparison purposes. An efficient connection to an established grid network is an important consideration of the transportation system in terms of reducing out-of-direction travel, thus reducing travel time, travel costs, and controlling emissions. A point ranking system was used where the option exhibiting the longest length of travel between the two subject intersections, in both directions, received the highest number of points (7 possible) and the shortest length of travel between the two subject intersections, in both directions, received the lowest number of points (1 possible).

6.1.2.1.8. CC1 – Planning Level Construction Costs?

High level planning cost estimates provided a reasonable measure to help compare the general magnitude of capital construction costs among the options under consideration. For screening purposes, the estimates reflected only the cost of construction and did not include highly variable costs like those associated with right-of-way acquisition, project development activities (preliminary engineering, indirect and incidental costs, etc.), environmental mitigation, or inflation. Variable costs were captured for the seven options after the screening process was completed, and are reflected in **Table 15**, and **Appendix 3 (Final Planning Level Costs Estimates – Seven Options)**. Necessary items that were considered to arrive at the high level planning cost included the following:

- Approximate bridge length (assumes bridge would have to be longer than the river's edge bank width);
- Approximate bridge width (assumes minimum width of 28 feet for two-way / 16 feet for one-way);
- Degree of skew of the bridge crossing (higher skew is more difficult to design, construct, and permit);
- Approximate bridge approach (i.e. road) length; and
- Approximate bridge approach width (assumes 40 feet minimum roadway width).

A minimum width for new bridge construction was assumed to be 28 feet, as this is the narrowest typical section that can be utilized as discussed in the Existing and Projected Conditions Report (**Appendix 3**). For the one-way new bridge option, the minimum bridge width would be 16 feet. For bridge lengths, it was

assumed that any new bridge would have to be longer than the bank widths by 20 feet on each side. This criterion also relies on the potential length of new approach road required for each option, and makes a determination of whether or not a substantial upgrade to approaches is required.

A point ranking system was used where the option exhibiting the highest planning level cost received the most points (7 possible) and the option exhibiting the lowest planning level cost received the fewest points (1 possible).

6.1.2.1.9. CC2 – Annualized Maintenance Costs?

This criterion provided an indication of estimated annual maintenance costs for each option. The potential maintenance costs for the approach roads were calculated as an annual maintenance cost in present day dollars (2012) by using an average maintenance cost of \$4,300 per lane mile (based on query of statewide average maintenance costs). For bridge maintenance costs, a review of past expenditures provided by Missoula County for the Maclay Bridge over a twenty-year period was completed. During the time period between 1993 and 2013, \$147,000 will have been expended on the Maclay Bridge. This equals approximately \$7,350 per year, or \$1.50 per square foot, for bridge maintenance activities on the existing Maclay Bridge. Potential bridge maintenance costs were developed based on this cost per square foot, and applied to those options that retain the existing bridge as part of the option.

A point ranking system was used where the option exhibiting the highest annualized maintenance cost received the highest number of points (7 possible) and the option exhibiting the lowest annualized maintenance cost received the lowest number of points (1 possible).

6.1.2.1.10. R1 – Effects on Aquatic Resources?

This criterion differentiates between options based on their potential effects to aquatic resources by considering the extent of work in the delineated floodplain. Information on the delineated floodplain is available draft digital FIRM (DFIRM) panel 1455E in a GIS database format, and was previously shown in the study's Environmental Scan. A point ranking system was used where the option exhibiting the longest crossing of the delineated 100-year floodplain received the highest number of points (7 possible) and the shortest crossing of the 100-year delineated floodplain received the lowest number of points (1 possible).

6.1.2.1.11. R2 – Will the Options have Impacts to Protected 4(f) or Section 106 Resources?

This criterion determined whether the options have the potential for impacting resources that are protected by Section 4(f) or fall under Section 106 of the National Historic Preservation Act (36 CFR 800). Section 4(f) resources include public parks, recreation areas, or wildlife and waterfowl refuges of national, State, or local significance, or land from a historic site of national, State, or local significance. Section 106 of the National Historic Preservation Act (36 CFR 800) establishes requirements for taking into account the effects of proposed Federal, Federally-assisted or Federally-licensed undertakings on any district, site, building, structure or object included in or eligible for inclusion in the NRHP. For the Maclay Bridge Planning Study, these resources include historic residences/outbuildings, a historic school building, and historic irrigation features. Section 4(f) and 106 resources were identified in the study's Environmental Scan.

Options that would have the potential for impacting 4(f) or Section 106 resources merited a HIGH answer. Those options that would not have the potential for impacting 4(f) or Section 106 resources merited a LOW answer.

6.1.2.1.12. R3 – Will the Options affect Lands Held under Conservation Easements?

This criterion determined whether the options have potential to affect lands held under conservation easements, and would require crossing those lands. Sizable areas of private land along the Bitterroot River are held under conservation easements by the Five Valleys Land Trust. Conservation easements exist for the purposes of preserving open space, protecting fish or wildlife habitat, or limiting the extent and density of development. Options that would have the potential for crossing lands held under conservation easements merited a HIGH answer. Those options that would not have the potential for crossing lands held under conservation easements merited a LOW answer.

6.1.2.1.13. NS1 – Number of Privately Owned Parcels Impacted?

This criterion assessed how many individual privately-owned parcels would be crossed or potentially impacted by the alignment associated with each option. The criterion estimates the potential extent of right-of-way (R/W) acquisition associated with each option. The number of privately-owned parcels crossed by an alignment was based on review of the Montana Cadastral Mapping database (accessed November 12, 2012 at <http://giscoordination.mt.gov/cadastral/msdi.asp>). Parcels crossed by the proposed alignment and falling within an assumed, standard 80' R/W width were counted. An exception to this is option 1.G (new one-lane bridge retain existing bridge for on-way travel). For option 1.G it was assumed that the new one-way configuration would necessitate a 60' R/W width.

A point ranking system was used where the option exhibiting the most number of privately owned parcels impacted received the highest number of points (7 possible) and the least number of privately owned parcels impacted received the lowest number of points (1 possible).

6.1.2.1.14. NS2 – Number of Structures Impacted?

This criterion identified whether or not structures may be impacted by each option. For purposes of this criterion, structures only consisted of residences. Impacts to existing structures helps assess the potential for relocations or right-of-way impact mitigations associated with the options. The number of structures potentially impacted was based on review of recent aerial photography (BingMapsAerial - © 2012 Microsoft Corporation, accessed November 12, 2012 at <http://www.bing.com/maps/#>). Structures are assumed to be impacted if they occur within a typical 80' R/W corridor. An exception to this is option 1.G. For option 1.G it was assumed that the new one-way configuration would necessitate a 60' R/W width. Options that would potentially impact structures given the assumptions above merited a HIGH answer, while those that would not potentially impact structures were given a LOW answer.

6.1.2.1.15. NS3 – R/W Needs?

This criterion estimated how much new right-of-way may be required with each option. An assumed new 80' R/W width was used for the option's alignments, and any known existing right-of-way was subtracted out, yielding a potential new right-of-way need. An exception to this was option 1.G. For option 1.G it was assumed that the new one-way configuration would necessitate a 60' R/W width. Existing available right-of-way was measured from the Montana Cadastral Mapping database (accessed November 12, 2012 at <http://giscoordination.mt.gov/cadastral/msdi.asp>). The area crossing the Bitterroot River was also subtracted out from each option, as that requires a permit for crossing navigable waters from the Montana DNRC.

A point ranking system was used where the option exhibiting the most needed right-of-way received the highest number of points (7 possible) and the option exhibiting the least needed right-of-way received the lowest number of points (1 possible).

6.1.2.1.16. NS4 – Does the Option Compare Favorably with Year 2040 “No Action” Model Traffic Volume Increases in front of the Target Range School?

This criterion measured the potential for traffic volume changes in front of the Target Range School. Target Range School is located on South Avenue, just east of Clements Road. Public comments expressed concerns about decreased safety in the vicinity of schools due to more traffic and increased travel speeds that could result from some options. The Missoula MPO travel demand model was used to compare future year 2040 “No Action” conditions to the options being considered that may affect traffic distribution. A point ranking system was developed based on the percent increase (or decrease) associated with each options modeled year 2040 traffic volumes as compared to the modeled year 2040 “No Action” traffic volumes. Options 2.C and 2.D do not have any changes, as the improvements contemplated under rehabilitation of the bridge do not affect capacity, thus not influencing the model. The option exhibiting the greatest percent change in traffic model volumes directly in front of Target Range School received the highest number of points (7 possible) and the option exhibiting the least change in traffic model volumes directly in front of Target Range School received the lowest number of points (1 possible).

6.1.2.2. Second Level Screening Rating Factors

As presented in **Section 6.1.2.1**, rating factors for some screening criteria were developed to assist in evaluations and quantify how well an option may meet the identified question and thus, the corresponding need or objective. **Table 12** describes the impact rating factors. Low/high and yes/no rating factors were developed and assigned to those screening criteria as applicable. In some cases, the rating factors were not used as the type of screening criteria may better have lent itself to an “order of ranking”, between 1 and 7, due to there being seven options carried forward from the first level screening process. This is further defined in **Appendix 3**. The lower an individual or cumulative point value was, the more desirable or better the criterion (or option) is considered.

Table 12: Second Level Screening Criteria Rating Factors

Potential Influence (type of criteria)	Rating (value)	Rating (value)	Screening Consideration
Impact (non-quantitative)	LOW (assigned point value = 1)	HIGH (assigned point value = 7)	R2 (protected resources); R3 (conservation easements); NS2 (structures)
Improve / Accommodate / Reduce / Provide / Increase (non-quantitative)	YES (assigned point value = 1)	NO (assigned point value = 7)	OS1 (sub-standard elements); OS2 (vehicle load restrictions); OS3 (bicyclists/pedestrian); OS4 (reduce crashes); OS5 (future traffic); OS6 (reduce delay); NS4 (traffic volumes)
Impact / Accommodate (quantitative)	Order of Ranking (1 – 7)		OS7 (efficient connections); CC1 (construction costs); CC2 (maintenance costs); R1 (aquatic resources); NS1 (private parcels); NS3 (r/w)

6.1.2.3. Second Level Screening Summary

Sixteen second level screening criteria were developed for the evaluation of the seven options forwarded for consideration through the first level screening process. The second level criteria address each of the needs, and many of the objectives, previously identified during the course of the study. Efforts were made not to “double count” the particular item being screened, and all criteria were treated equal in that no “weighting” occurred – thus no one criterion is more important than the other.

The results of the second level screening process are shown below. Assigned point values and rankings are depicted in **Table 13**. The point ranking was developed such that those options with the fewest points ranked most favorably, while those with the most points ranked poorest.

- 3E.1 - South 1 Alignment (32 POINTS)
- 3E.2 - South 2 Alignment (39 POINTS)
- 3C.2 - Mount 2 Alignment (44 POINTS)
- 3A.2 - North 1 Alignment (52 POINTS)
- 1G - New One-Lane Bridge at a New Location & Retain Existing Bridge for One-Way Travel (68 POINTS)
- 2D - Major Rehabilitation (includes Approaches) (70 POINTS)
- 2C - Minor Rehabilitation (includes Approaches) (73 POINTS)

Appendix 3 (Screening Assessment Memorandum) contains more detailed information on the screening process and results for each option.

Table 13: Second Level Screening Point Values and Rankings

Second Level Screening Question ID	POINT ASSIGNMENTS FOR OPTIONS CONSIDERED						
	OPTION 1 - IMPROVE SAFETY AND OPERATIONS ON EXISTING BRIDGE	OPTION 2 - REHABILITATE THE BRIDGE		OPTION 3 - BUILD NEW BRIDGE			
	1G Add new 1-lane bridge Retain old for 1-way travel	2C Minor Rehab (includes Approaches)	2D Major Rehab (includes Approaches)	3A.2 North 1	3C.2 Mount 2	3E.1 South 1	3E.2 South 2
OS1	7	7	7	1	1	1	1
OS2	7	7	1	1	1	1	1
OS3	7	7	7	1	1	1	1
OS4	7	1	1	1	1	1	1
OS5	1	7	7	1	1	1	1
OS6	7	7	7	1	1	1	1
OS7	3	5	5	5	7	1	2
CC1	3	1	2	4	7	5	6
CC2	6	7	3	5	2	1	4
R 1	7	5	5	5	1	2	3
R 2	1	1	7	7	7	1	1
R 3	1	1	1	1	1	1	1
NS1	1	6	6	6	4	2	3
NS2	1	7	7	7	1	1	1
NS3	4	2	2	2	7	5	6
NS4	5	2	2	4	1	7	6
TOTAL TABULATED POINTS	68	73	70	52	44	32	39
RANKING	5	7	6	4	3	1	2

6.2. ADDITIONAL INFORMATION ON OPTIONS CARRIED FORWARD

The result of the first level screening process determined 7 of the 28 options met the needs and objectives. The seven options were previously described in **Chapter 5**. The seven options are all potential transportation system treatments that Missoula County may consider if they decide to pursue a project. Based on the point values assigned during the second level screening process, Option 3E.1 – South 1 Alignment clearly rates better than the others. This option is described separately in **Section 6.3** of this chapter.

Planning level cost estimates were prepared for each of the seven options. The estimates are slightly different than the construction cost estimates utilized in the screening process as the revised estimates include the addition of preliminary engineering (PE) costs, and incidental and indirect costs (IDICs).

The revised planning level costs do not include detailed right-of-way acquisition or utility relocation costs. This is important to consider because if a project is developed, it may be necessary to acquire additional right-of-way to meet current standards. The appropriate right-of-way is 80 feet (for two-way, two-lane travel) and 60 feet (for one-way, one-lane travel). Existing right-of-way widths vary throughout the corridor. Right-of-way acquisition is estimated to cost approximately \$1,500 to \$10,000 per acre, depending on the properties' proximity to the Bitterroot River.

6.2.1. OPTION 3E.1 - SOUTH 1 ALIGNMENT

The South 1 alignment provides a relatively direct connection between Reserve Street and River Pines Road. The crossing of the river as envisioned would result in a modest skew of 30 degrees. The estimated length of roadway needed with this option is 620 feet, with the majority of this being on the east side of the Bitterroot River. On the west side, the bridge approach would tie into River Pines Road with very little road construction. The new bridge length would be about 650 feet.

PLANNING LEVEL COST ESTIMATE

The planning level cost estimate for this alignment is \$6,300,000. This includes estimated construction costs (with contingencies), preliminary engineering costs (10%) and indirect and incidental costs (10%).

RIGHT-OF-WAY CONSIDERATIONS AND POTENTIAL COSTS

The South 1 alignment could potentially impact four privately owned parcels, resulting in new right-of-way needs of 1.5 acres. The potential cost of acquiring the right-of-way could range between \$2,250 and \$15,000.

Because this option had the lowest point total at the conclusion of the screening process, and therefore ranked as most favorable, it is described in greater detail later in this chapter in **Section 6.3**.

6.2.2. OPTION 3E.2 - SOUTH 2 ALIGNMENT

The South 2 alignments ranked the second best at the end of the screening process. Many of the impacts and nuances of this alignment are similar to the South 1 alignment, described later in this chapter. The South 2 alignment provides a relatively direct connection between Reserve Street and River Pines Road. The crossing of the river as envisioned would result in a fairly high skew of 37 degrees. High skew bridges are more difficult to design, permit and construct. The estimated length of roadway needed with this option is almost twice as much as the South 1 option (1,430 feet versus 620 feet). The option would require more right-of-way than South 1 (2.3 acres versus 1.5 acres), and would also potentially impact one more privately owned parcel (5 parcels versus 4 parcels).

PLANNING LEVEL COST ESTIMATE

The planning level cost estimate for this alignment is \$6,400,000. This includes estimated construction costs (with contingencies), preliminary engineering costs (10%) and indirect and incidental costs (10%).

RIGHT-OF-WAY CONSIDERATIONS AND POTENTIAL COSTS

The South 2 alignment could potentially impact five privately owned parcels, resulting in new right-of-way needs of 2.3 acres. The potential cost of acquiring the right-of-way could range between \$3,450 and \$23,000.

6.2.3. OPTION 3C.2 - MOUNT 2 ALIGNMENT

The Mount 2 alignment begins near the intersection of Mount Avenue and Humble Road, immediately proceeds in a southwesterly direction across the Bitterroot River and joins River Pines Road at the west end of the existing Maclay Bridge. The alignment traverses a large tract of agricultural land. From an efficiency viewpoint, Mount Avenue does not afford a direct east-west linkage to the major streets within the area (such as Reserve Street). Thus out-of-direction travel is realized as it forms a “tee” intersection with Clements Road. Mount Avenue is functionally classified as a local street.

The Mount 2 alignment would result in approximately 1,200 feet of new roadway construction, and a bridge length of approximately 625 feet. Most notable regarding a new crossing at this location is that the bridge would be highly skewed to the river channel at approximately 45 degrees.

PLANNING LEVEL COST ESTIMATE

The planning level cost estimate for this alignment is \$7,700,000. This includes estimated construction costs (with contingencies), preliminary engineering costs (10%) and indirect and incidental costs (10%).

RIGHT-OF-WAY CONSIDERATIONS AND POTENTIAL COSTS

The Mount 2 alignment could potentially impact six privately owned parcels, resulting in new right-of-way needs of 2.4 acres. Of the seven options, this option has the largest area of right-of-way acquisition needed. The potential cost of acquiring the right-of-way could range between \$3,750 and \$24,000.

6.2.4. OPTION 3A.2 - NORTH 1 ALIGNMENT

The North 1 alignment provides a new bridge parallel to and just upstream from the existing Maclay Bridge. The alignment begins on North Avenue at its intersection with Edward Avenue. The alignment of River Pines Road west of the river would be improved to eliminate the 90-degree curve at the west end of the existing bridge. This alignment would have a major impact on the utility substation just east of the existing bridge. Likewise, to modify River Pines Road to meet current standards and shift the road away from the river, the roadway would have to be relocated slightly farther to the west.

The North 1 alignment would result in approximately 1,650 feet of new road construction - the majority of which would be on the west side of the river. The new bridge crossing would be on the order of 400 feet, and would be at a relatively modest skew to the river of approximately 20 degrees. Overall travel patterns would remain similar to that of the existing bridge, and would still connect higher classification roadways (i.e. collector roads) as are currently in place.

PLANNING LEVEL COST ESTIMATE

The planning level cost estimate for this alignment is \$4,400,000. This includes estimated construction costs (with contingencies), preliminary engineering costs (10%) and indirect and incidental costs (10%).

RIGHT-OF-WAY CONSIDERATIONS AND POTENTIAL COSTS

The North 1 alignment could potentially impact twelve privately owned parcels, and result in the acquisition of one residential structure. Total new right-of-way needed is on the order of 0.4 acres, which

ties for the least amount of needed right-of-way (with the two rehabilitation options). The potential cost of acquiring just the right-of-way could range between \$600 and \$4,000. The acquisition of a private residence could be upwards of \$200,000.

6.2.5. OPTION 1G - NEW ONE-LANE BRIDGE AT A NEW LOCATION & RETAIN EXISTING BRIDGE FOR ONE-WAY TRAVEL

A pair of one-way roads and bridges is envisioned under Option 1G. The option assumes that the existing single-lane bridge would be in place at its present location, along with a new single-lane bridge at a South Avenue location. This has commonly been referred to as a one-way couplet, although this option as described does not meet the true definition of a couplet as the two roadways are not directly adjacent and parallel to each other. The direction of travel with this option is unknown and would be at the discretion of Missoula County. Two one-way bridges could serve to better distribute traffic impacts throughout the neighborhood, and also improve response times for emergency service providers. Right-of-way widths for one-way roadways would be less than that for a two-way roadway, resulting in lower costs and potentially fewer overall impacts.

Most likely the direction of travel for the one-way concept would be east-to-west for a new South Avenue bridge, and west-to-east for the existing Maclay Bridge. This would allow emergency responders to travel unimpeded from Fire Station #1 to access the west side of the river. Capacity concerns of the existing bridge could be alleviated as generally future traffic volumes out to the planning horizon would be split, with half on a new South Avenue location and half on the existing Maclay Bridge location.

A series of one-way roads does have inherent problems related to traffic flow and non-motorized uses. Typically, speeds are faster on one-way roads – even if posted the same as a two-way facility. This can present a problem for pedestrians and bicyclists wishing to cross a route. On one hand, non-motorized users only have to look in one direction to cross the roadway, but on the other these users are faced with faster speeds. Speeds can be mitigated with proper design and traffic calming features.

PLANNING LEVEL COST ESTIMATE

The planning level cost estimate for this option is \$3,900,000. The cost includes estimated construction costs (with contingencies), preliminary engineering costs (10%) and indirect and incidental costs (10%).

RIGHT-OF-WAY CONSIDERATIONS AND POTENTIAL COSTS

Option 1G could potentially impact three privately owned parcels, which is the fewest of the seven options identified for consideration. The resulting new right-of-way required is 1.1 acres. This is the only option for which a 60-foot right-of-way width was selected for the calculations (for the new South Avenue location). The potential cost of acquiring the right-of-way could range between \$1,650 and \$11,000.

6.2.6. OPTION 2D - MAJOR REHABILITATION (INCLUDES APPROACHES)

The goal of a major rehabilitation would be to extend the life of the bridge to something similar to that of a new bridge. Major rehabilitation work could allow the bridge to handle full legal loads so that there would be no need for a limited load posting. This option requires a long term financial commitment to the existing bridge due to the increase in life span. The ultimate life span of the bridge would be dependent on the rate of deterioration, aggressiveness of ongoing repair work, and barring major damage from flooding and/or vehicles.

Major rehabilitation of the structure would be completed in concert with improvements to the approaches to bring them up to current standards. Approach work would be similar to that envisioned under the North 1 alignment, thus impacts would likely be similar. A major drawback of major rehabilitation of the structure is that the fundamental geometric deficiencies would still remain relative to the bridge deck width (i.e.

single travel lane for two-way traffic). Sub-standard conditions for the approaches can be fixed; however the sub-standard conditions for the existing Maclay Bridge cannot. Thus, major rehabilitation of the existing Maclay Bridge only resolves the load limitations, but nothing else. As traffic volumes grow, the existing Maclay Bridge may not be suitable from a capacity or operational standpoint. Although minor transportation management system (TSM) treatments such as lighting, better signing, traffic metering devices, etc. may help in the short term, the long term growth in traffic and the large unknowns associated with a major rehabilitation introduces a high amount of risk relative to elevated project costs.

Conditions of the river channel at the existing bridge location are unknown relative to the suitability of the bridge footings and their placement within the channel.

PLANNING LEVEL COST ESTIMATE

The planning level cost estimate for this option ranges from \$1,100,000 to \$3,200,000. The range is due to the uncertainties over the scope and level of effort required with a major rehabilitation. A concise bridge inspection would be required to provide an accurate identification of bridge conditions, work needed to address any and all bridge deficiencies to increase safety and capacity and associated costs. The range of costs includes estimated construction costs (with contingencies), preliminary engineering costs (10%) and indirect and incidental costs (10%).

RIGHT-OF-WAY CONSIDERATIONS AND POTENTIAL COSTS

Similar to the North 1 alignment, this option could potentially impact twelve privately owned parcels, and result in the acquisition of one residential structure. Total new right-of-way needed is on the order of 0.4 acres, which ties for the least amount of needed right-of-way (with North 1 and the minor rehabilitation options). The potential cost of acquiring just the right-of-way could range between \$600 and \$4,000. The acquisition of a private residence could be upwards of \$200,000.

6.2.7. OPTION 2C - MINOR REHABILITATION (INCLUDES APPROACHES)

The goal of a minor rehabilitation would be to extend the life of the bridge by performing minor upgrades and repairing deterioration and damage. Missoula County would continue to perform routine maintenance activities to keep the structure in service under its load limitation for use by local residents, school buses and emergency service vehicles. This option would not address the fundamental geometric deficiencies relative to the bridge deck width (i.e. single travel lane for two-way traffic). Many of the constraints noted in the major rehabilitation option described earlier would be applicable to this option. With minor rehabilitation, the posted vehicle weight limit restriction could be increased from the current 11 tons to around 13 tons.

PLANNING LEVEL COST ESTIMATE

The planning level cost estimate for this option ranges from \$810,000 to \$1,100,000. The range is due to the uncertainties over the scope and level of effort required with a minor rehabilitation. A concise bridge inspection would be required to provide an accurate identification of bridge conditions, work needed to address any and all bridge deficiencies to increase safety and capacity, and associated costs. The range of costs includes estimated construction costs (with contingencies), preliminary engineering costs (10%) and indirect and incidental costs (10%).

RIGHT-OF-WAY CONSIDERATIONS AND POTENTIAL COSTS

Similar to the North 1 and Major Rehabilitation options, this option could potentially impact twelve privately owned parcels, and result in the acquisition of one residential structure. Total new right-of-way needed is about 0.4 acres, which ties for the least amount of needed right-of-way (with North 1 and the major rehabilitation options). The potential cost of acquiring just the right-of-way could range between \$600 and \$4,000. The acquisition of a private residence could be upwards of \$200,000.

6.3. OPTION 3E.1 (SOUTH 1) CONSIDERATIONS

The South 1 alignment is described in greater detail in this section. This option warrants further discussion than the other six options due to several considerations:

- The option ranked the best at the conclusion of the screening process since it addressed operational and safety concerns presented in the needs & objectives that limited resource and neighborhood/social impacts.
- The public has repeatedly asked for the traffic and cost impacts associated with the South 1 option.

6.3.1.1. Description

The alignment shown in **Figure 5** and described earlier shows the minimum amount of improvement for a new bridge crossing at South Avenue. The South 1 alignment could potentially impact four privately owned parcels, resulting in new right-of-way needs of 1.5 acres. No private residences would need to be acquired. The planning level cost estimate for this alignment is \$6,300,000.



Figure 5: South 1 General Alignment

6.3.1.2. Future Traffic Impacts

The Missoula TDM was used to help predict future traffic growth for the year 2040. The basis for the TDM is more fully explained in **Section 3.2.3** of this report. The TDM helped quantify potential traffic volume changes if a new bridge crossing was placed at a South Avenue extension. For these purposes, year 2040 projected traffic volumes were compared for the No Action condition against the South 1 option. The No Action condition is if no changes were made to the transportation network out to the year 2040, other than periodic maintenance activities at the existing Maclay Bridge and surrounding roadways. The reason for this comparison was to document potential traffic volume changes on area roadways resulting from a new bridge at South Avenue over and above what would normally be expected. **Table 14** provides a summary of the projected volume change for the year 2040 as a result of a new South Avenue bridge. The results are also shown graphically in **Figure 6**.

Table 14: Year 2040 AADT Traffic Modeling Projections (No Action vs. South 1)

Street	Location	# of Lanes (Context)	No Action Projected 2040 AADT ^(a)	South 1 Projected 2040 AADT ^(a)	General Daily Capacity AADT ^(e)	AADT Change
Big Flat Rd	100 ft W of O'Brien Ck Rd	2 (Rural)	6,550	6,850	6,000	300
Blue Mountain Rd	500 ft N of Hwy 93	2 (Rural)	5,450	5,050	6,000	-400
Blue Mountain Rd	S of South Side Rd	2 (Rural)	4,400	4,050	6,000	-350
Brooks St	Bitterroot River Bridge	4+ (Urban)	46,000	45,350	31,900	-650
Clements Rd	300 ft N of North Av	2 (Urban)	5,900	5,700	7,300	-200
Clements Rd	300 ft S of North Av	2 (Urban)	3,850	5,950	7,300	2,100
Clements Rd	500 ft S of S 3rd W	2 (Urban)	4,500	4,400	7,300	-100
Kona Ranch Rd ^(c)	Kona Ranch Bridge	2 (Rural)	6,450	6,750	6,000	300
Mullan Rd	E of Snowdrift Ln	2 (Rural)	9,100	9,350	6,000	250
North Av	300 ft W of Clements Rd	2 (Urban)	4,750	1,250	7,300	-3,500
Reserve St	Between Dearborn & South Av	4+ (Urban)	46,750	47,000	31,900	250
Reserve St	Between OlofsonDr & S 3rd W	4+ (Urban)	50,150	50,000	31,900	-150
Reserve St	Between South Av & Central Av	4+ (Urban)	47,250	47,350	31,900	100
Reserve St	S of LarkenwoodDr	4+ (Urban)	50,650	50,400	31,900	-250
River Pines Rd	300 ft W of Maclay Bridge	2 (Rural)	5,650	0	6,000	-5,650
S 3rd W	W of Reserve	2 (Urban)	13,200	13,150	7,300	-50
S 7th W	150 ft W of Reserve	2 (Urban)	3,250	3,300	7,300	50
S 7th W	300 ft E of Clements Rd	2 (Urban)	700	700	7,300	0
South Av	Between 31st and 33rd	2 (Urban)	8,350	9,150	11,700	800
South Av	Between Humble & Pleasant	2 (Urban)	2,900	5,150	7,300	2,250
South Av	Between Reserve & 26th	2+ (Urban)	16,350	16,850	17,700	500
South Av	E of Clements Rd	2 (Urban)	5,400	6,350	7,300	950
South Av ^(d)	New Bridge	2 (Urban)	-	7,200	7,300	-
South Av	W of Clements Rd	2 (Urban)	6,550	9,250	7,300	2,700
Spurgin Rd	250 ft W of Reserve	2 (Rural)	2,550	2,550	6,000	0
Spurgin Rd	300 ft E of Clements Rd	2 (Rural)	1,200	1,200	6,000	0

Source: MDT Multi Modal Planning Bureau, Statewide & Urban Planning Section, 2012; Missoula Office of Planning and Grants, Transportation Division.

^(a) Projected AADT's rounded to nearest 50 vpd.

^(b) Percentages based on difference in actual TDM volumes, and not on the "rounded" volumes.

^(c) TDM volume used as no actual "on-the-ground" counts are available to adjust.

^(d) New bridge link - TDM volume used as no actual "on-the-ground" counts are available to adjust.

^(e) General daily capacities (AADT) from Table 6-1 of 2008 Missoula Long Range Transportation Plan. Based on road lane configuration, functional classification and whether road is in rural or urban locale.

The data depicted in **Table 14** shows that a new bridge crossing at South Avenue would increase traffic in some locations and reduce traffic in other locations. For example, by removing the existing Maclay Bridge, North Avenue just west of Clements Road could potentially see a traffic volume drop of 3,500 vpd, during the projected year 2040. Conversely, South Avenue just west of Clements Road may see a rise in traffic of 2,700 vpd, during the projected year 2040. These numbers are not surprising given the removal of the Maclay Bridge in the TDM and the addition of a new two-way, two-lane bridge at South Avenue. The two locations referenced above are the locations that realize the largest change in traffic volumes.

South Avenue in general would see an increase in traffic volumes with the South 1 option as compared to a No Action scenario, with the largest increase west of Clements Road. On South Avenue, directly in front of Target Range School (i.e. east of Clements Road), the predicted traffic volume may rise 950 vpd, with a new South Avenue bridge over that which could be anticipated in the year 2040 without the new bridge.

Clements Road, just south of North Avenue, could realize an increase of 2,100 vpd, due to vehicles not being able to utilize the Maclay Bridge, and therefore having to travel south on Clements Road to access the new South Avenue bridge and points to the west.

An additional observation from the TDM is that with a new South Avenue Bridge, the year 2040 traffic volume drops across the Buckhouse Bridge (on Brooks Street) by 650 vpd. This implies that with a new South Avenue Bridge, a slight amount of traffic would route across the new bridge that may otherwise route across the Buckhouse Bridge. This phenomenon is not seen at the Kona Ranch Road Bridge.

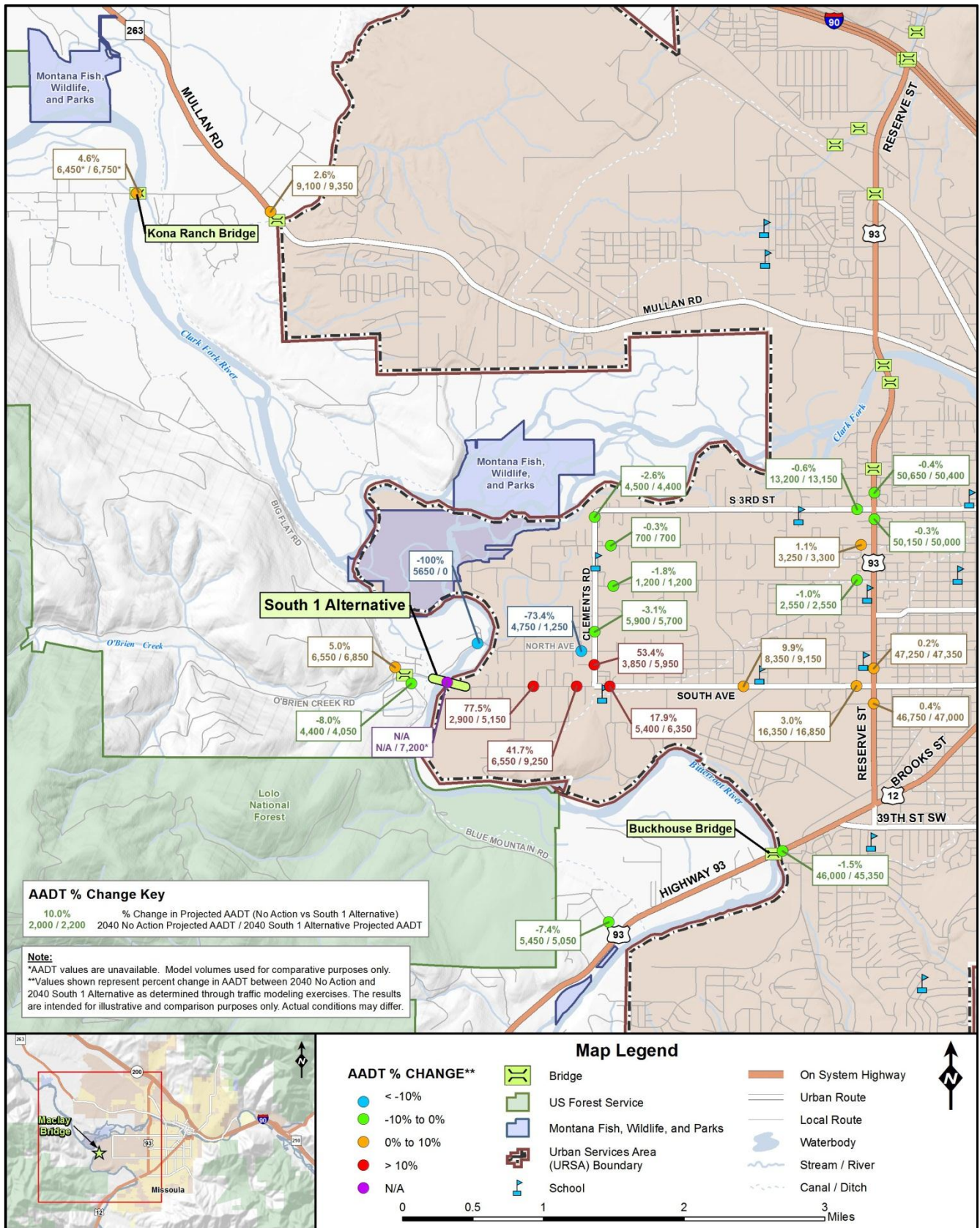


Figure 6: Change in Projected Year 2040 AADT (No Action vs. South 1)

6.3.1.3. Other Design Consideration

Reviewing the output of the TDM, and acknowledging the numerous comments provided during the study's 12-month development, questions have been asked about future roadway improvements, the impacts to schools and non-motorized users, and effects to the area's "quality of life". Some of these can be quantified, while some cannot. For the South 1 option there will need to be a great deal of discretion provided by Missoula County relative to design standards to mitigate potential impacts, if a project is developed.

For example, the minimum bridge width as previously documented for a new bridge at South Avenue would be 28 feet. This would provide for two, 12-foot travel lanes and two, 2-foot shoulders. This is a narrow width that would have a tendency to slow traffic down. The wider the bridge becomes, the harder it is to control travel speeds without additional measures, such as traffic calming (i.e. traffic circles or speed tables on the approaches to the bridge), heightened enforcement, or geometric design tools to institute deflection on the immediate approaches to the structure. The placement of non-motorized facilities such as sidewalks, on-street bicycle lanes, and shared-use paths can also help define the roadside environment. These items can result in a wider bridge to accommodate all amenities.

The same can be said for the roadways leading up to the bridge. The standard as previously noted (**Appendix 3, Existing and Projected Conditions Report**) is for a 40-foot roadway width. Typically this would include two, 12-foot travel lanes and two, 8-foot shoulders. A configuration less than this width could be achieved for South Avenue by planning for something similar to what is on North Avenue. Again this would be less than the "standard", but Missoula County would need to evaluate these design parameters in context with community concerns and available funding. The placement of roundabouts at major intersections may also regulate traffic flows and serve to reduce travel speeds.

The need for roadway improvements all the way from a new South Avenue Bridge to Reserve Street may not be necessary. The potential additional traffic impacts directly related to a new South Avenue Bridge are confined primarily to South Avenue west of Clements Road. East of Clements Road the traffic volume increases expected as a result of the proposal are not large compared to the year 2040 No Action conditions. Accordingly, it is unlikely that a new South Avenue Bridge necessitates roadway reconstruction east of Clements Road. What is uncertain, however, is whether South Avenue west of Clements Road would require roadway improvements. The data in **Table 14** suggests that without a new bridge at South Avenue the year 2040 AADT volumes may be close to 6,550 vpd. With a new bridge, the volume may grow to around 9,250 vpd. As currently configured, South Avenue west of Clements Road may be able to accommodate up to 7,300 vpd according to the theoretical roadway planning capacities found in the *2008 Missoula Long Range Transportation Plan (Table 6-1)*.

Roadway improvements between Clements Road and the proposed tie-in point for the new bridge approach (i.e. the end of South Avenue just west of Hanson Drive) could be contemplated in the future if traffic volumes grow to a level that cannot be accommodated with the existing road or through aggressive traffic calming such as traffic circles or roundabouts at the intersections. These are decisions to be made at the project level if and when a project is undertaken. To gain extra capacity, improvements such as left or right turn lanes at major intersections may be necessary to achieve potential capacities up to 9,600 vpd. Traffic volumes should be monitored to determine the usage of the route and if the upper volumes are realized.

If roadway reconstruction was desired from the currently envisioned tie-in point to Clements Road - a length of approximately 4,800 feet - the construction costs alone could be on the order of \$1.6 million. Elevating this cost to include preliminary engineering (PE), and incidental and indirect costs (IDICs), this value could approach \$1.9 million.

Chapter 7

FUNDING MECHANISMS

MDT administers a number of programs that are funded from State and Federal sources. Local and/or private funding sources may also be available to implement a bridge option. For options associated with the replacement of the Maclay Bridge, the likely funding source falls under MDT's Off-System Bridge Program (formerly known as the Highway Bridge Replacement and Rehabilitation Program).

Each year, in accordance with 60-2-127, Montana Code Annotated (MCA), the Montana Transportation Commission allocates a portion of available federal-aid highway funds for construction purposes and for projects located on various systems in the state as described throughout this chapter.

7.1. FEDERAL FUNDING SOURCES

The following summary of major Federal transportation funding categories received by the State through the Moving Ahead for Progress in the 21st Century Act (MAP-21) enacted on July 6, 2012, includes state developed implementation / sub-programs that may be potential sources for any project developed to replace the Maclay Bridge. In order to receive project funding under these programs, projects must be included in the State Transportation Improvement Program (STIP).

7.1.1. SURFACE TRANSPORTATION PROGRAM (STP)

STP funds are Federally apportioned to Montana and allocated by the Montana Transportation Commission to various programs.

7.1.1.1. Off-System Bridge Program²

Funds for the program are derived from the Federal gas tax, which is outside Federal general revenue sources and doesn't impact or add to the Federal deficit. Funds are Federally apportioned to Montana under the provisions of the current highway bill, MAP-21. MAP-21 requires a minimum percentage of the funding be used for off-system bridges.

ALLOCATIONS AND MATCHING REQUIREMENTS

Off-system bridge funds are distributed statewide. The Commission distributes off-system bridge funding based on off-system bridge inspections, need and County priorities. Of the total available, 86.58 percent is Federal and the State is responsible for the remaining 13.42%. The State share is funded through the Highway State Special Revenue Account.

ELIGIBILITY AND PLANNING CONSIDERATIONS

Under MAP-21 eligibility is defined by MDT. MDT's Off-System Bridge Program has the objective of addressing safety. As noted in the key findings, there are safety issues with the existing Maclay Bridge – the traffic level of this single-lane bridge and Emergency Services access to residents west of the river are considered safety issues. Identified crash trends also contribute to safety concerns. A project must address the safety issues to be eligible for Off-System Bridge Program funds.

² State funding programs developed to distribute Federal funding within Montana

7.1.2. FEDERAL LANDS AND TRIBAL TRANSPORTATION PROGRAM

This program is a three part program consisting of the Federal Lands Transportation Program, Tribal Transportation Program and the Federal Lands Access Program. The Federal Lands Transportation Program is administered by FHWA and the federal land management agencies. The Tribal Transportation Program is administered by the BIA and the appropriate tribal agency.

7.1.2.1. FEDERAL LANDS ACCESS PROGRAM

This program is administered by Western Federal Land Highway Division of the FHWA in consultation with MDT and MACO who represent the local governments. Projects are funded in Montana to the ratio of 86.58% federal funds and 13.42% matching funds.

All public roadways are eligible under the following criteria:

- Roadway jurisdiction or maintenance is by a state government, local government or tribal government; and
- The route must provide direct access to or run adjacent to federal lands.

7.1.3. TRANSPORTATION ALTERNATIVES (TA) PROGRAM

The Transportation Alternatives (TA) program requires MDT to obligate 50% of the funds within the state based on population, using a competitive application process, while the other 50% may be obligated in any area of the state. Funds may be obligated for projects submitted by:

- Local governments
- Transit agencies
- Natural resource or public land agencies
- School district, schools, or local education authority
- Tribal governments
- Other local government entities with responsibility for recreational trails for eligible use of these funds

ELIGIBILITY AND PLANNING CONSIDERATIONS

Eligible categories include:

- On-road and off-road trail facilities for pedestrians and bicyclists, including ADA improvements
- Historic preservation and rehabilitation of transportation facilities
- Archeological activities relating to impacts for a transportation project
- Any environmental mitigation activity, including prevention and abatement to address highway related stormwater runoff and to reduce vehicle/animal collisions including habitat connectivity
- Turnouts, overlooks and viewing areas
- Conversion/use of abandoned railroad corridors for trails for non-motorized users
- Inventory, control and removal of outdoor advertising
- Vegetation management in transportation right of way for safety, erosion control, and controlling invasive species
- Construction, maintenance and restoration of trails, development and rehabilitation of trailside and trailhead facilities
- Development and dissemination of publications and operation of trail safety and trail environmental protection programs.
- Educations funds for publications, monitoring and patrol programs and for trail-related training.

- Planning, design, and construction of projects that will substantially improve the ability of students to walk and bicycle to school.
- Non-infrastructure-related activities to encourage walking and bicycling to school, including public awareness campaigns and outreach to press and community leaders, traffic education and enforcement in the vicinity of schools, student sessions on bicycle and pedestrian safety, health, and environment, and training

COMPETITIVE PROCESS:

The State and any Metropolitan Planning Organizations required to obligate Transportation Alternative funds must develop a competitive process to allow eligible applicants an opportunity to submit projects for funding. As a new program and process under MAP-21, the competitive process will be developed as soon as possible.

7.2. STATE FUNDING SOURCES

7.2.1. TREASURE STATE ENDOWMENT PROGRAM (TSEP)

Treasure State Endowment Program (TSEP) funds may be used in conjunction with MDT's Off-System Bridge Program funds. TSEP is a state-funded program that is designed to help address the "affordability" problem of infrastructure need by providing grants to lower the cost of constructing public facilities projects. The program helps local governments with constructing or upgrading drinking water systems, wastewater treatment facilities, sanitary or storm sewer systems, solid waste disposal and separation systems, and bridges. The program was authorized by Montana's voters with the passage of Legislative Referendum 110 on June 2, 1992. The law has been codified as Sections 90-6-701 through 90-6-710, MCA. The TSEP program is administered by the Montana Department of Commerce.

ALLOCATIONS AND MATCHING REQUIREMENTS

In order to be eligible for a TSEP project grant, matching funds must be provided by the applicant to assist in financing the total project cost. Applicants are generally eligible to request a grant that is no greater than 50% of the eligible project expenses. In cases of extreme financial hardship and where very serious deficiencies exist that would affect the public's health or safety, an applicant may be eligible to receive a Hardship Grant from 51% up to 75% of the eligible project expenses in order to help reduce user costs to a more affordable level.

ELIGIBILITY AND PLANNING CONSIDERATIONS

Requests for matching grants for bridge projects are limited to a maximum of \$500,000 per application unless the county can clearly demonstrate that extenuating circumstances exist. An amount greater than \$500,000 may be allowed for bridge projects if the applicant submits an application for only one bridge and the total cost of the bridge project is greater than \$1,000,000. Only one application per applicant each funding cycle is permitted.

7.3. LOCAL / PRIVATE FUNDING SOURCES

Local governments generate revenue through a variety of funding mechanisms. Typically, several local programs related to transportation exist for budgeting purposes and to disperse revenues. These programs are tailored to fulfill specific transportation functions or provide particular services.

7.3.1. MISSOULA COUNTY

7.3.1.1. Road Fund

The County Road Fund provides for the construction, maintenance, and repair of all county roads outside the corporate limits of cities and towns in Missoula County. Revenue for this fund comes from intergovernmental transfers (i.e., State gas tax apportionment and motor vehicle taxes), and a mill levy assessed against county residents living outside cities and towns. The county mill levy has a ceiling limit of 15 mills.

County Road Fund monies are primarily used for maintenance with little allocated for new road construction. It should be noted that only a small percentage of the total miles on the county road system are located in the study area. Projects eligible for financing through this fund will be competing for available revenues on a county-wide basis.

7.3.1.2. Special Revenue Fund

Special revenue funds may be used by the county to budget and distribute revenues legally restricted to a specific purpose. Several such funds that benefit the transportation system are discussed briefly in the following paragraphs.

7.3.1.2.1. Capital Improvements Fund

This fund is used to finance major capital improvements to county infrastructure. Revenues are generated by loans from other county funds, and must be repaid within ten years. Major road construction projects are eligible for this type of financing.

7.3.1.2.2. Rural Special Improvement District (RSID) Revolving Fund

This fund is used to administer and distribute monies for specified RSID projects. Revenue for this fund is generated primarily through a mill levy and through motor vehicle taxes and fees. A mill levy is assessed only when delinquent bond payments dictate such an action.

7.3.1.2.3. Special Bond Funds

A fund of this type may be established by the county on an as-needed basis for a particularly expensive project. The voters must approve authorization for a special bond fund. The county is not currently using this mechanism.

7.3.2. PRIVATE FUNDING SOURCES AND ALTERNATIVES

Private financing of highway improvements, in the form of right-of-way donations and cash contributions, has been successful for many years. In recent years, the private sector has recognized that better access and improved facilities can be profitable due to increases in land values and commercial development possibilities. Several forms of private financing for transportation improvements used in other parts of the United States are described in this section.

7.3.2.1. Development Financing

The developer provides the land for a transportation project and in return, local government provides the capital, construction, and necessary traffic control. Alternatively, developer constructs necessary roadway improvements as a condition for access approval. Such a financing measure can be made voluntary or mandatory for developers.

7.3.2.2. Cost Sharing

The private sector pays some of the operating and capital costs for constructing transportation facilities required by development actions.

7.3.2.3. Transportation Corporations

These private entities are non-profit, tax exempt organizations under the control of state or local government. They are created to stimulate private financing of highway improvements.

7.3.2.4. Road Districts

These are areas created by a petition of affected landowners, which allow for the issuance of bonds for financing local transportation projects.

7.3.2.5. Private Donations

The private donation of money, property, or services to mitigate identified development impacts is the most common type of private transportation funding. Private donations are very effective in areas where financial conditions do not permit a local government to implement a transportation improvement itself.

7.3.2.6. General Obligation (G.O.) Bonds

The sale of general obligation bonds could be used to finance a specific set of major highway improvements. A G.O. bond sale, subject to voter approval, would provide the financing initially required for major improvements to the transportation system. The advantage of this funding method is that when the bond is retired, the obligation of the taxpaying public is also retired. State statutes limiting the level of bonded indebtedness for cities and counties restrict the use of G.O. bonds. The present property tax situation in Montana, and recent adverse citizen responses to proposed tax increases by local government, would suggest that the public may not be receptive to the use of this funding alternative.

7.3.2.7. Development Exactions/Impact Fees

Exaction of fees or other considerations from developers in return for allowing development to occur can be an excellent mechanism for improving the transportation infrastructure. Developer exactions and fees allow growth to pay for itself. The developers of new properties should be required to provide at least a portion of the added transportation system capacity necessitated by their development, or to make some cash contribution to the agency responsible for implementing the needed system improvements.

Establishment of an equitable fee structure would be required to assess developers based upon the level of impact to the transportation system expected from each project. Such a fee structure could be based upon the number of additional vehicle trips generated, or upon a fundamental measure such as square footage of floor space. Once the mechanism is in place, all new development would be reviewed by the local government and fees assessed accordingly.

7.4. FUNDING ELIGIBILITY

Due to the nature of the potential improvements, and the sub-standard conditions of the existing Maclay Bridge, not all of the seven options will be eligible for MDT's Off-System Bridge Program.

Rehabilitating the bridge will not correct the deficient safety features needed to serve the long term intended use of the facility. Although Title 23 United States Code (USC) does allow rehabilitation (§ Section 144(o)), other provisions are needed to gain a complete understanding of when it would be prudent to rehabilitate a historic structure. Title 23 USC § 144(o)(1)) and §144(o)(3) are two sections that provide guidance. The rehabilitation option(s), in light of the provisions, would not be eligible in this

particular instance for the reasons described in the provisions above and documented in **Chapter 3** of this planning study.

Title 23 USC § 144(o)(1) does encourage the “inventory, retention, rehabilitation, adaptive re-use, and future study of historic bridges” and 23 USC § 144(o)(3) further defines that reasonable costs to preserve or reduce the impacts of a project on a historic bridge are eligible - provided the load capacity and safety features of the bridge are adequate to serve the intended use for the life of the bridge. This is not the case with this structure. Also, § 144(o)(p) further directs that “a project not on a Federal-aid highway under this section shall be designed, constructed, operated, and maintained in accordance with State laws, regulations, directives, safety standards, design standards and construction standards”. MDT would not contribute off-system bridge funds to an alternative that does not address safety and deficient standards including approaches.

Table 15 summarizes the options, potential costs, and Off-System Bridge Program funding eligibility.

Table 15: Summary of Costs and Funding Eligibility ^(a)

Option ID	Comprehensive Cost	Eligible for Off-System Bridge Program Funds?	Reasoning for Funding Eligibility
OPTION 1 - IMPROVE SAFETY AND OPERATIONS ON THE EXISTING BRIDGE			
1G - New One-Lane Bridge at a New Location & Retain Existing Bridge for One-Way Travel	\$6,050,000 to \$8,450,000	POSSIBLE	Additional study is needed to determine eligibility. The comprehensive cost is shown as a range due to uncertainty on the potential scope of improvements to the existing Maclay Bridge.
OPTION 2 - REHABILITATE THE BRIDGE			
2C - Minor Rehabilitation (includes Approaches)	\$1,150,000 to \$1,500,000	NO	This option does not meet the Safety objective of the MDT Off-system Bridge Program.
2D - Major Rehabilitation (includes Approaches)	\$1,500,000 to \$3,900,000	NO	This option does not meet the Safety objective of the MDT Off-system Bridge Program.
OPTION 3 - BUILD NEW BRIDGE ^(b)			
3A.2 - North 1 Alignment	\$5,300,000	YES	This option meets the Safety objective of the MDT Off-System Bridge Program.
3C.2 - Mount 2 Alignment	\$9,000,000	YES	This option meets the Safety objective of the MDT Off-System Bridge Program.
3E.1 - South 1 Alignment	\$7,300,000	YES	This option meets the Safety objective of the MDT Off-System Bridge Program.
3E.2 - South 2 Alignment	\$7,450,000	YES	This option meets the Safety objective of the MDT Off-System Bridge Program.

^(a) “Comprehensive Costs” in this table include construction, preliminary engineering, incidental and indirect costs, inflation (3 percent per year for five years) and right-of-way costs.

^(b) The comprehensive cost estimates envision a new bridge and limited approach work to tie into the existing roads. This would meet the intent of MDT’s Off-System Bridge Program by addressing bridge related safety issues. Roadway reconstruction outside of bridge approach tie-in points are likely not eligible for MDT’s Off-System Bridge Program funding.

Chapter 8

PLANNING STUDY CONCLUSION

The study evaluated the Maclay Bridge river crossing and the surrounding transportation system to gain a better understanding of system needs, objectives, constraints and opportunities, and funding availability. In addition to analyzing applicable data from MDT, Missoula County, and resource agencies; a comprehensive public involvement process was conducted to gather relevant information from community members and stakeholders groups. This information led to a set of options to be considered by the Missoula County Commissioners.

The study identified several options that would address the operational characteristics, safety and physical conditions of the existing facility. However, based on the screening and ranking process, only one option rose to the top as the best alternative to ensure that, over the foreseeable future, the facility meets applicable MDT and local design standards and provides the desired improvements in safety and operations for the traveling public. Option 3E.1, South 1 Alignment delivers a transportation facility that meets current and future demands, addresses safety on the bridge and the sub-standard roadway approaches to the bridge, and provides connectivity to neighborhood residents and regional users accessing recreational lands to the west of Bitterroot River.

The Missoula County Commissioners may elect to proceed with one of the other options discussed in this study; however, three options (1G, 2C and 2D) may not be eligible for MDT's Off-System Bridge Program funding. For these options, Missoula County would need to use local funds and follow their own internal project development process.

If the County intends to use federal highway funds administered by MDT for a federal-aid eligible improvement, the decision would be determined by a majority vote of Missoula's Transportation Policy Coordinating Committee (TPCC) made up of two representatives each from the County and City; and one representative from each of the following: MDT, Missoula Urban Transportation District, and the Missoula Consolidated Planning Board. An improvement funded with local or private funds is the County's decision and not subject to the TPCC.

8.1. PURPOSE AND NEED

The purpose of a future project is to have a river crossing in the Maclay Bridge area to enhance the operational characteristics, increase safety and improve physical conditions that provides for safety and operations for the traveling public over the foreseeable future.

To accomplish this purpose, the proposed options and resultant project must:

- Incorporate physical changes to the river crossing, road approaches and its adjoining environment so the facility complies with MDT's and Missoula County's geometric design standards for a collector roadway; and
- Provide a transportation facility that meets current and future demands.

8.2. NEXT STEPS

The ability to develop a project is dependent on the availability of existing and future federal, state, local, and private funding sources. At the current time funding has been identified but not secured to proceed with a project. Should the Missoula County Commission elect to proceed with a project to replace the Maclay Bridge river crossing, the following steps are needed:

- Identify the option that best meets the safety, environmental, and social needs in the area identified in the study;
- Identify and secure a funding source or sources; and
- Follow MDT guidelines for project nomination and development, including a public involvement process and environmental documentation that describes any potential impacts and mitigation measures from any proposed action.

Should Missoula County elect to proceed with the three options that may not be eligible for MDT's Off-System Bridge Program (i.e. options 1G, 2C and 2D), they would need to use local funds and follow their own internal project development process.

The "Purpose and Need" statement for any future project should be consistent with the needs and objectives contained in this study. Should this study lead to a project (or projects), compliance with NEPA (if federal funding is utilized) and MEPA (regardless of funding source) will be required. Further, this Planning Study will be used as the basis for determining the impacts and subsequent mitigation for the improvement options in future NEPA documents. Any project developed will need to be in compliance with CFR Title 23 Part 771 and ARM 18, sub-chapter 2 which sets forth the requirements for documenting environmental impacts on highway projects.



Appendix 1

CONSULTATION, COORDINATION AND PUBLIC INVOLVEMENT



The matrix below contains a summary of the comments received during the Draft Planning Study Document comment period and includes a response when clarification is required. Comments are shown in their entirety on the CD

ID #	First Name	Last Name	Summary of Comments Received	Response
1	Anonymous	Anonymous	Bridge should be made safe; building new on South compounds all the current problems and adds many new problems; planning process has been discouraging; listen to people - majority are against the South bridge; there will be litigation; make reasonable improvements to the current bridge.	Thank you for your comments. They are included in our study records.
2	Roger	Austin	Existing bridge has outlived its purpose; it has poor approaches with restricted visibility; winter icy conditions present traction concerns on approaches; concerned with the functionality for emergency services; overall area does not have adequate water for fire suppression; bridge's weight limitations preclude water tender trucks from using it; emergency services would not be able to cross during a 100-year flood event.	Thank you for your comments. They are included in our study records.
3	Cyra	Cain (MT DEQ)	Appendix 2 (Environmental Scan), P. 22, as stated: "Areas where air pollution levels do not exceed the air pollution thresholds established in the NAAQS are designated as "attainment" areas." Clarification: Areas may also be designated as "Unclassifiable" where there is insufficient data to classify.	Thank you for your comments. They are included in our study records. Clarifying language has been added to "Section 3.2.4.6 – Air Quality" in the final planning study report.
4	Anonymous	Anonymous	Long-time Big Flat resident; would love to see a modern, safe bridge at the end of South; Maclay Bridge is an old relic; it's time to modernize.	Thank you for your comments. They are included in our study records.
5	Lorna	Richardson	Heed final outcome of 1994 and 2013 studies - came to same conclusion; need new bridge on the end of South; concerned over children's safety across bridge; doesn't support band aid fix; bridge is an accident waiting to happen almost yearly; bridge is a public nuisance; Mount crossing is absurd; strongly oppose that option; flooding on River Pines Road occurs frequently; approaches to the bridge have poor visibility – need proper signs or lights; do some minor work until a permanent solution is resolved; act now and not wait another 10 or 20 years to fix the same problems noted in both studies.	Thank you for your comments. They are included in our study records.
6	Sara	Lustgraaf	Two one-way bridges is the worst idea; two alternatives are equally the best: (1) current site with a new bridge, and (2) South site is a direct shot across - will alleviate the hazardous curves on River Pines; sympathize with residents at the end of South; present site would avoid all the upset; don't want to ruin the view of the landscape on the end of South.	Thank you for your comments. They are included in our study records.
7	Anonymous	Anonymous	Supports new bridge at the end of South; would be an extraordinary improvement over the current unsafe, one-lane bridge that serves this growing area.	Thank you for your comments. They are included in our study records.
8	Kate	Pennachio	Concerns regarding a potential 2-lane bridge; appreciates rural nature of Target Range neighborhood; best agricultural land is in the area; neighborhood plan sets the minimum lot size at 1 house per acre – rural nature; current Maclay Bridge has served the community very well; single lane forces people to slow down; safer area for children; with new two lane bridge we will lose the very	Thank you for your comments. They are included in our study records.

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ID #	First Name	Last Name	Summary of Comments Received	Response
			nature of Target Range; higher speeds and volumes will increase; would change the nature of the neighborhood; most reasonable option is rehabilitation of the existing bridge with addition of a pedestrian bike/walking bridge; this approach would address the needs of emergency vehicles and school buses and others in the area, while retaining the very nature of the community that Target Range residents have worked so hard to protect.	
9	Roger and Janet	Hinther	New bridge off South will create a bypass and add thousands of vehicles to neighborhood roads; Blue Mountain Road is narrow and extremely dangerous; light at South and Reserve is poor; traffic turning north at Reserve will get caught in another 30 mph school zone; bridge will increase traffic in our residential areas; people mainly go west over the river for recreation in the Blue Mountain area; residents care deeply about our area; keep Maclay Bridge viable – do not introduce a South bridge.	Thank you for your comments. They are included in our study records.
10	Bob	Carter	Oppose the proposed bridge on South Ave; support the Maclay Bridge rehabilitation option.	Thank you for your comments. They are included in our study records.
11	Anonymous	Anonymous	Against a new 2-lane bridge at South; built home in current area due to traffic flow; had obnoxious bridge traffic near home previously - drunk and naked people; currently traffic is dissipated down North to Clements and down Humble to South; with new bridge at South all traffic will come down South making it difficult to turn left during busy times; will take all traffic past school; intersection near Target Range is already crowded and difficult during busy times; request that the bridge not be placed there.	Thank you for your comments. They are included in our study records.
12	Sara	Mutch	Opposes new two-lane bridge; already too much traffic on Big Flat and River Pines Roads; faster two-lane bridge will increase this traffic load; concerns for wildlife and more accidents; will increase traffic on South past elementary school and high school increasing traffic hazards for students; new bridge will cause much greater environmental impact than upgrading the existing one; Maclay Bridge is historic and single-lane is a reminder to slow down and appreciate one's surroundings; why is it a better choice to spend 7 times as much as maintaining the old bridge in these times of budget shortfalls; consider all environmental and social costs of new bridge; choose simpler, lower impact Maclay Bridge that is more appropriate for the local country roads it serves.	Thank you for your comments. They are included in our study records.
13	Bob	Schweitzer	Draft Maclay Bridge Study Report specifically says that federal funding for rehabilitation of the bridge is not available - research indicates that may be incorrect; Title 23 US Code Section 144(o) specifically addresses design exceptions for historic bridges; Maclay Bridge is over 50 years old, is eligible for inclusion in the National Register of Historic Places, and is entitled to rehabilitation funding for off-system bridges; we are perplexed as to why this study did not reveal availability of federal funding for rehabilitation. Could you please enlighten us.	Thank you for your comments. They are included in our study records. Federal Highway Administration (FHWA) staff responded to this comment as follows: To address your concern regarding the use of federal-aid funds to rehabilitate the Maclay Bridge as detailed in the current planning study, simply rehabilitating the bridge will not meet current design standards or correct the deficient

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ID #	First Name	Last Name	Summary of Comments Received	Response
				<p>load capacity and safety features needed to serve the long term intended use of the facility. The section you referenced does allow rehabilitation (§ Section 144(o)) but other provisions are needed to gain a complete understanding of when it would be prudent to rehabilitate a historic structure. 23 United States Code (USC) § 144(o)(1) and §144(o)(3) are two sections that guide our decision. The rehabilitation option for this structure, in light of the provisions, would not be eligible in this particular instance for the reasons described in the provisions above and documented in the planning study.</p> <p>For your reference, Title 23 USC § 144(o)(1) does encourage the “inventory, retention, rehabilitation, adaptive re-use, and future study of historic bridges” and 23 USC § 144(o)(3) further defines that reasonable costs to preserve or reduce the impacts of a project on a historic bridge are eligible provided the load capacity and safety features of the bridge are adequate to serve the intended use for the life of the bridge, which is not the case with this structure. Also, § 144(o)(p) further directs that “a project not on a Federal-aid highway under this section shall be designed, constructed, operated, and maintained in accordance with State laws, regulations, directives, safety standards, design standards and construction standards”. As stated in the planning study, MDT would not contribute off-system bridge funds to an alternative that does not address safety and deficient standards including approaches.</p> <p>The section in 23 USC you referenced is routinely used to preserve historic bridges when a decision has been made to construct a new bridge in a new (or same location) as opposed to simply demolishing the historic structure. The provisions of the section allow a state Department of Transportation (DOT) to use funding up to the costs of demolition of the bridge to preserve it for non-motorized purposes or make the bridge available for donation to a State, local agency or private entity that is willing to commit to maintaining the bridge and the features that make it eligible for the National Register of Historic Places. While the preservation of the existing Maclay Bridge as a non-motorized bridge is an option identified within the planning study, additional conversations are needed and a commitment made to the maintenance of the bridge if this option is pursued. The U.S. Army Corps of Engineers will also need to be engaged on the permitting considerations of</p>

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ID #	First Name	Last Name	Summary of Comments Received	Response
				leaving the existing bridge piers and constructing new piers in the waterway.
14	Ben	Deeble	Many flaws in planning study; bridge calms traffic through neighborhood; Target Range Neighborhood Plan found no need to replace bridge; study failed to consult with USFS or City of Missoula regarding traffic flows; study ignores the neighborhood's sensibilities and its professional knowledge; costs of new bridge will cost county taxpayers millions more to widen South to cope with the resulting surge in traffic volume, congestion and speed; existing bridge can be rehabilitated for one-tenth the expense but disqualified for unclear reasons; official planning team has ignored professional structural engineer recommendations; retired statistician volunteered study's ranking system was badly skewed; replacement of Maclay Bridge will push "problem" of river access to a new location; replacement recommendation at South defies common sense and disregards community sentiment and expertise.	Thank you for your comments. They are included in our study records.
15	Sharon	Rose (MFWP)	Copy of MFWP letter dated May 2012 not found in Appendix 1 of the Draft Planning Study Report; does appear that several of our comments were addressed. Was letter ever received?	Thank you for your comments. They are included in our study records. Yes, your May 2012 letter was received.
16	Charles	Crowther	Law enforcement problems at the current bridge; can't park within three blocks; people on bridge cause traffic jams; night parties happen under bridge; bridge damaged by flood waters three times; concerned about the wildlife; swimming at bridge is dangerous.	Thank you for your comments. They are included in our study records.
17	Ed	Taylor	Adamantly opposed to a new bridge at any location; concerned about defacto bypass and increase in traffic; one lane bridge acts as a traffic calming device; concerned about safety at South and Reserve; traffic will increase on neighborhood roads with new bridge; rehabilitate the old bridge; don't impact a new area and ignore Target Range Neighborhood Plan; at the very least retain existing bridge as a bicycle pedestrian resource.	Thank you for your comments. They are included in our study records.
18	Don	Loftsgaarden	Blatant, obvious mistakes in ranking process; corrections provided – does not change ranking results in Chapter 6 of report for highest four ranked options; no criteria that reflects goals of Target Range Neighborhood Plan (TRNP).	Thank you for your comments. They are included in our study records. Ranking process completed by Planning Team was reviewed within the context of other pre-National Environmental Policy Act (NEPA) / Montana Environmental Policy Act (MEPA) Planning Studies and found to be appropriate for the noted purpose. Suggested edits and opinions are noted, however revisions did not change outcome. There are numerous processes available to screen options.

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ID #	First Name	Last Name	Summary of Comments Received	Response
				Criteria related to the Target Range Neighborhood Plan (TRNP) was initially considered, along with criteria representative of other County and regional planning documents. Unfortunately, these documents conflict with each other, and the Planning Team elected to not develop criteria associated with the TRNP, regional Transportation Plan (TP), Growth Policy, active TP, etc. – due to the inherent conflicts found in each document.
19	Michael	Burnside	Consider revising the history of the bridge in the draft report to reflect County archived historical information; many residents assume the age of the bridge dates from 1935; County records shows the oldest bridge sections (the west truss and pony truss) were installed in 1952 and the east sections date from 1964.	Thank you for your comments. They are included in our study records.
20	Lorna	Richardson	Interesting to see what a year of real high water may do to the old Maclay bridge; hate to live west of the bridge if it washes due to high water.	Thank you for your comments. They are included in our study records.
21	Kris	Crawford	Safety is an important issue - many accidents over the years at or near bridge; desire to use the Maclay Bridge as a walk/bike bridge.	Thank you for your comments. They are included in our study records.
22	Lorna	Richardson	Safety is our biggest issue; band-aid effort is not in the best public interest; swimmers will continue to drown by jumping off the highest part of the bridge; shocked when extra weight of asphalt added to structure; a two lane bridge with a walk path needed; public safety outweighs keeping a bridge that has served its time; favors replacement at the end of South Avenue.	Thank you for your comments. They are included in our study records.
23	Sharon	Rose (MFWP)	Was MFWP May 2012 letter left out of Appendix 1 an error -- or for some reason were you not including agency letters in Appendix 1 as part of the record?	Thank you for your comments. They are included in our study records. Agency letters received in response to the Environmental Scan review are included in Montana Department of Transportation (MDT's) and Missoula County's project files.
24	Elizabeth	Stevenson	Maclay Bridge has outlived it's usefulness to auto traffic; combined use of runners, walkers, horseback riders, bicyclists and all types of motorized vehicles at this river crossing has been unsafe always; difficult visibility on the approaches; River Pines Road does not safely accommodate people not in vehicles; need safe non-motorized access across river; do not support Target Range Homeowners' Association vision; supportive of South replacement bridge to improve safety. Will protest taxes being added to the Target Range School district if existing bridge remains; design for multi-use can enhance the value of the corridor; river	Thank you for your comments. They are included in our study records.

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			<p>corridor for wildlife important; offer a beautifully designed bridge and access; traffic near the school as a reason for not replacing the bridge is misguided - most schools in Missoula are on traffic corridors because it makes sense for convenient access.</p> <p>Develop a bridge plan that completes the vision of a positive addition to the neighborhood; unknown is the anxiety; interpretive area for multi-use and education adjacent to structure will likely get more community support.</p>	
25	Anonymous	Anonymous	Listen to the majority of local citizens; clear majority is opposed to building a new bridge on South; a sensible alternative exists; irresponsible to proceed with an expensive and unpopular plan for very little positive benefit.	Thank you for your comments. They are included in our study records.
26	Joe	St. Peter	Favors new bridge at the end of South Avenue; money is already available; only option that makes sense; current bridge is a detriment to the environment and the river; ignore the vocal opposition to a new bridge - they are thinking only of themselves; right decision is the same decision since 1994; don't let selfish voices drown out your common sense.	Thank you for your comments. They are included in our study records.
27	Thomas and Lois	Peterson	New South bridge is in the 100-year flood plain – this would create a dam to anyone being just south of the bridge; we do not want to be flooded out because of where this bridge will be placed.	Thank you for your comments. They are included in our study records.
28	Harold	Palmer	A bus full of children and two cars on the bridge at the same time probably exceeds weight limit; would be a real tragedy to have the bridge collapse with a bus full of children; 15 mph speed limit ignored; River Pines Road very unsafe - no shoulders or walkways; no guard rails on the river side of the road; comes down to the safety factor of the bridge; a new bridge is very much needed and should be built on the end of South.	Thank you for your comments. They are included in our study records.
29	Gary	Botchek	<p>Existing bridge is safe and maintainable; maintenance recommendations / needs not completed by Missoula County; last major upgrade to bridge took a citizen effort; county's own in-house engineering review (1986) determined bridge could be rehabilitated to meet 36-ton vehicle load standards; approved Target Range Neighborhood Plan overwhelmingly supports rehabilitating Maclay Bridge; supports major rehabilitation of bridge with a pedestrian bridge; will need expensive infrastructure upgrades to South with new bridge.</p> <p>Concerned about increase in vehicle trips; urban fringe development area (UFDA) study involves primarily Target Range and Orchard Homes neighborhoods east of the Bitterroot River; west of river very limited land available for development; any increased traffic due to potential bypass of Reserve Street.</p> <p>Honor findings of Target Range Neighborhood Plan in conjunction with a</p>	Thank you for your comments. They are included in our study records.

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			informal but well defined petition (1000 plus signatures) in support of keeping the existing Maclay Bridge; provide a complete rehabilitation of the Maclay Bridge; include a pedestrian/bike walkway for a fraction of the cost of a new bridge; rehabilitation of this historic bridge is eligible for federal funding.	
30	Gary	Botchek	Who pays for any road and traffic changes/upgrades resultant from a new bridge at the end of South; why are associated costs not included in the total cost of a new bridge; South Avenue traffic & construction impacts are created or enhanced by a new South Avenue bridge; new South bridge will significantly alter the use of North Avenue; added costs could easily exceed 3 (three) million dollars; a new bridge on South will move existing 2,610 vehicles at a faster rate based on a straight shot from a new bridge east to Clements Road; even without a proposed South bridge traffic generators will require significant improvements to South Avenue.	Thank you for your comments. They are included in our study records. Costs for upgrading South Avenue between Hanson Drive and Clements Road were accounted for and are shown on page 61 of the draft planning study report.
31	Thomas	Peterson	New South bridge is in the 100-year flood plain – this would create a dam to anyone being just south of the bridge; we do not want to be flooded out because of where this bridge will be placed.	Thank you for your comments. They are included in our study records.
32	William	Kohl	Study ignores the wants and desires of the Target Range neighborhood; no major traffic issues exists with current bridge; bridge does slow traffic flow through neighborhood; better and less costly solution is to upgrade the existing bridge for bicycles and pedestrians; new bridge on South will invite more traffic on Big Flat Road - not built to accomodate additional traffic along with the current foot and bicycle traffic; new bridge will create more problems than it will resolve.	Thank you for your comments. They are included in our study records.
33	Anonymous	Anonymous	Listen to reasoned commentary from informed citizens that oppose building a new bridge on South; stop wasteful allocation of taxpayer money; make the responsible choice to fix the current Maclay Bridge.	Thank you for your comments. They are included in our study records.
34	Anonymous	Anonymous	Planning study conclusion is fundamentally flawed; contrary to both common sense and the consensus opinion of the majority of Target Range residents; current bridge can be repaired for a fraction of the cost of a new bridge; it is irresponsible to proceed with a new bridge in order to get "free money"; building a new bridge on South requires new approaches be constructed and utilities to be moved - unaccounted costs; intangible costs to the neighborhood and residents; property taxes would increase, safety would paradoxically be decreased, and the voice of concerned citizens ignored.	Thank you for your comments. They are included in our study records.
35	John and Becky	Peters	Support rehabilitation of Maclay Bridge; could support the proposed South bridge if Maclay Bridge could not be rehabilitated, but this is not the case; whole character of Target Range is at stake; there are many flaws in the latest study and misleading information; new bridge would create a major east-west corridor increasing traffic; options such as traffic lights could be added.	Thank you for your comments. They are included in our study records.

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			Safety issues can be solved; put tax money into rehabilitation of Maclay Bridge - keep the unique character of Target Range; rehabilitation of Maclay Bridge will meet needs and address the issues.	
36	<i>Don</i>	<i>Stevenson</i>	Surprised County hasn't been sued over Maclay Bridge as an attractive nuisance; one or two people drown every year; appreciate the numerous trips the Sheriff officers make to the site; no signs have helped; cost for policing but the real cost is the lost of human lives; removing the cement bridge abutments would let the river fill in the town swimming hole naturally.	Thank you for your comments. They are included in our study records.
37	<i>Susan</i>	<i>Smalley</i>	Opposed to using Mount Avenue as a new route; old bridge can be used; if cannot be rehabilitated then South is the best choice for a direct travel route; don't like going to two lane bridge; it will increase traffic.	Thank you for your comments. They are included in our study records.
38	<i>Sharon</i>	<i>Strebis</i>	South Avenue between Hanson and Humble is narrower than South Avenue east of Humble; concern about South Avenue ability to handle traffic safely; concerned about absence of pedestrian/bike concerns in planning study; listen to neighborhood constituents and not push forward on a project - not supported by the Target Range Neighborhood Plan; rehabilitate or just maintain Maclay Bridge.	Thank you for your comments. They are included in our study records. Costs for upgrading South Avenue between Hanson Drive and Clements Road were accounted for and are shown on page 61 of the draft planning study report.
39	<i>Michael</i>	<i>Burnside</i>	Mr. Loftsgaarden's statistical study and comments are being used as a basis for questioning the quality of the work; not certain of the validity of his analysis; South bridge opponents don't realize that after Loftsgaarden applies his "corrections" to the criteria, he comes up with the same ranking of the top alternatives as the study team, with South as the best; seems his criticisms of the study and its conclusions are moot and further validates your work.	Thank you for your comments. They are included in our study records.
40	<i>Karen</i>	<i>Knudsen</i>	Consider options that best balance protection of the river, riparian areas and the fish and wildlife along the lower Bitterroot River, with the needs of the surrounding community; ensure bridge(s) has as few impacts on the river and wetlands as possible; maintain roadway connection in ways that protect and enhance - rather than harm - our rivers; maintain only one bridge over the Bitterroot to reduce impacts on riparian resources, floodplains and the river itself; any option for a new bridge should ensure no piers are in the floodway; or if Maclay Bridge is substantially rebuilt, a design without river piers should be considered; avoid impacts to wetland, riparian, and floodplain resources from construction/reconstruction, future use, and maintenance of the bridge and approaching roadways, and fully mitigate any unavoidable impacts; robustly engage the public through a series of visioning and listening sessions.	Thank you for your comments. They are included in our study records.

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41	Will	Lustgraaf	Necessary to have a bridge across the river in the general vicinity of the existing bridge; believe existing bridge is inadequate considering public safety, convenience, and general traffic handling capability; two-lane bridge with straight-on approach alignments would be adequate; bridge should be capable of efficiently conveying a wide variety of two-lane traffic; best option is a two-lane bridge similar to the Kona Ranch Bridge; North Avenue to the existing bridge is discontinuous between Big Sky High School and Reserve Street; any attempt to upgrade the existing bridge structure would be a waste of time, resources, and opportunity.	Thank you for your comments. They are included in our study records.
42	Connie and Dave	LaVaute	Oppose new bridge at South Avenue; would destroy rural integrity of the neighborhood; should not take advantage of federal funding; moving the bridge will not lessen the parking and swimming issues - we believe it will make the situation worse.	Thank you for your comments. They are included in our study records.
43	Tom	Stockstill	Not logical (financial or practical) to create a multi-million dollar thoroughfare to an already overused street/highway; safety and security of many area residents/children will be severely compromised; there is a long standing need for traffic through Missoula; don't penalize a rural neighborhood for many years of mis-steps; unpopular with affected residents; difficult to understand the logic of big bridge and rural speedway through a quiet neighborhood; upgrade existing bridge and increase enforcement – most practicable.	Thank you for your comments. They are included in our study records.
44	Kristin	Anderson	Two studies - in 2013 and 1994 - arrived at the same conclusion; supports new bridge on the west end of South Avenue; maintaining the existing bridge negatively impacts the environment; out-of-direction travel with existing bridge - adds to increased travel times, extra gasoline consumption, more air pollution and exposes more of the neighborhoods to traffic and safety problems; existing bridge abutments and piers constrict river flow; sediment(s) upstream of the two center bridge piers; scouring may be slowly undercutting bridge abutments and piers; long term stability problems; not addressing known hazards of existing bridge poses serious liability to County.	Thank you for your comments. They are included in our study records.
45	Evan	Rosenberg	Supports new bridge at South Avenue as most logical choice; move forward with constructing new bridge at South; current Maclay Bridge is unsafe, inefficient, and harmful to our environment; safety of the bridge is primary concern; bridge has created a serious risk for drowning; people have lost their lives due to this scour hole; county at serious risk of liability for future deaths; current location is inefficient requiring traffic to divert from South and wind through Target Range neighborhood; results in additional driving time for fire trucks and ambulances; putting the bridge on the main road (South Avenue) and thereby eliminating traffic on every other side street (such as Humble, Clements, North, and Woodlawn) would preserve the rural character of Target Range as a whole since all of the traffic would remain on the main arterial road; getting rid of the current bridge corrects negative environmental impact the current bridge has had on the	Thank you for your comments. They are included in our study records.

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			river; concerned over Mount Avenue 2 being the third ranked option in the planning study; should never made it past the first level screening process – does not provide an efficient connection to the existing road network.	
46	Michael	Burnside	<p>Planning study report validates and supports 1994 Environmental Assessment; study has been exhaustive both in public involvement and in reviewing and analyzing the issues surrounding the bridge; highly significant that the 2013 study independently arrived at the same conclusion for the best bridge site as the 1994 study - South Avenue. Existing bridge is dangerous and a major problem; causes frequent traffic accidents and drownings; fully loaded school buses are right at the bridge's 11 ton weight limit; fire trucks must straddle the centerline and travel 5 miles per hour; bridge failed up to 5 times in the past with the last major washout in 1948; entire bridge was rebuilt in 1952 with parts of an old Blackfoot River bridge; foundations of the piers are unknown and could wash out in the next spring flood; if bridge fails in the future, west side access for forest fires or home emergencies would be delayed - county would have to bear the costs to fix or replace it; up to 2,610 vehicles per day (vpd) cross the old bridge daily and the report shows this will grow to 5,650 vpd by 2040; safe standard for a one-lane bridge is 100 vpd - common sense calls for its replacement.</p> <p>Issue your decision; accept the recommendations of this report; issue decision soon after the report is final; have everything you need at that point to make an informed decision; current study has shown there is no significant new information or changed conditions since 1994 that have not been addressed.</p>	Thank you for your comments. They are included in our study records.
47	Robert	Schweitzer	<p>Believes federal funding is available for a rehabilitation option because the bridge cannot be brought up to current standards; examples show otherwise - federal funding is available through provisions for design exceptions for historical bridges; rehabilitation option offers broad neighborhood support, cost effectiveness for all government agencies, adequate traffic flow with built in calming qualities, and improved safety for pedestrians and bicyclists; perceived unwillingness by state and county engineers to waive self-imposed standards with a context sensitive design exception; re-evaluate rehabilitation option - advance it as a reasonable alternative; does not require immediate upgrades to service streets and roads; does not require further extensive study and permitting; can be implemented sooner, enjoyed more quickly, with the least disruption for the neighborhood and the community at far less cost than a new bridge replacement.</p>	<p>Thank you for your comments. They are included in our study records.</p> <p>Please see response to comment #13 for use of Federal funds for bridge rehabilitation.</p>
48	Michale	Sterbis	Opposes new bridge on South Avenue; believes the planning study is incomplete because it does not take an in-depth look into the deficiencies of the roads (specifically South Avenue); almost no discussion at all about how building a large, two lane bridge is going to affect the Target Range Neighborhood; no discussion whatsoever about the amount of work that would need to be done on	Thank you for your comments. They are included in our study records.

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			<p>South Avenue; very important questions were completely ignored as the study focused primarily on the bridge; study is seriously flawed because it has ignored completely the safety issues on South Avenue.</p> <p>No discussion about affects to the Target Range area and whether it fits in with the Target Range Neighborhood Plan; estimates of increased traffic in the study are under-estimates because no discussion of social issues was discussed; urge more consideration of either replacing the existing Maclay Bridge with another one lane bridge, or refurbishing the existing bridge.</p>	
49	Daphne	Herling	Favor rehabilitation plan proposed by Maclay Bridge Alliance; screening criteria are insufficient to address community concerns for safety, expense and previous community planning efforts; flaws in screening as per retired statistician Don Loftsgaarden; safety concerns for the Target Range children are not adequately considered; South Avenue will become bypass between Missoula and Highway 93; rehabilitating the current bridge will address safety issue(s) and maintain the character of a sustainable, walkable community; rehabilitation plan can be implemented sooner without the costly full NEPA study; new bridge doesn't align with Target Range Neighborhood Plan.	Thank you for your comments. They are included in our study records.
50	Steve	Seininger	Planning study is incomplete, insufficient and omits important cost tradeoffs and safety concerns; totally ignores negative impacts on neighborhoods and the local community; study incorrectly and erroneously ranks South Avenue as the preferred alternative; supports rehabilitation as outlined by MBA.	Thank you for your comments. They are included in our study records.
51	Bryan and Darla	Steubs	Construction of a new bridge at South violates needs 3 and 4 in the report; significantly impacts rural amenities identified as desirable in the Target Range Neighborhood Plan; will directly impact Target Range School with increased traffic and increased speeds; single lane bridge is a superb traffic calming device; best fit is the rehabilitation option forwarded by the Maclay Bridge Alliance.	Thank you for your comments. They are included in our study records.
52	Deborah	Richie	Strongly oppose a new bridge; supports rehabilitation of Maclay Bridge; riparian area is very delicate, rich in wildlife, and important to preserve; new bridge is ecologically harmful; will encourage fast driving with more wildlife being killed.	Thank you for your comments. They are included in our study records.
53	Angela	Lavato	Prefer to keep the same location and refurbish the old bridge; economically more responsible; preserves the integrity of our rural lifestyle; one lane has never been a concern.	Thank you for your comments. They are included in our study records.
54	Jo	York	Advocate rehabilitation of Maclay Bridge, with a separated pedestrian crossing; can be implemented sooner without full NEPA study; good option because it maintains the goals of the Target Range Neighborhood Plan; represents less than 15% of the cost of replacement; a 2-lane structure is neither possible nor desirable from the neighborhood perspective.	Thank you for your comments. They are included in our study records.

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55	Bruce	Barrett	Retain current bridge; not purpose of bridge rehabilitation to enhance private property values for some while devaluing new ones; there was a two lane bridge at the location for a long time; one lane bridge was moved there from another part of the county in tough financial times; one lane bridge was a simple and cheap replacement for an existing two lane; but even retaining the one lane bridge is fine; higher taxes now are too much of a burden.	Thank you for your comments. They are included in our study records.
56	Frances	Owings	Opposed to replacing the Maclay Bridge; better solution to upgrade the existing structure; adversely affects property on Hanson Drive.	Thank you for your comments. They are included in our study records.
57	Roy	Owings	Opposed to replacing the Maclay Bridge; adversely affects property on Hanson Drive; creates additional and higher speed traffic along South Avenue.	Thank you for your comments. They are included in our study records.
58	Anonymous	Anonymous	What is the current total estimated cost of bridge construction? What is the estimated cost of bridge approaches? What is the estimated cost for rights of way? What is the contingent cost of rehabilitation and widening for South Avenue, River Pines, Blue Mountain and Big Flat Roads to accommodate increased traffic? Will any of these costs be subject to Special Improvement Districts? Will a SID be assessed to the entire county or just among homeowners in the district.	Thank you for your comments. They are included in our study records. Comprehensive planning level costs are included in Chapter 6 and Appendix 3 of the draft planning study report. They are summarized below for the South 1 option: <ul style="list-style-type: none">• Comprehensive bridge construction costs = \$5,985,000• Comprehensive bridge approach costs = \$315,000• Right-of-way costs = \$2,250 to \$15,000• Contingent costs = \$1.9 million for South Avenue Funding sources for future infrastructure projects, which are separate from a new replacement bridge and approaches funded with Off-System Bridge Funds, are unidentified at this time.
59	Anonymous	Anonymous	February 28, 2011 (Jean Curtiss, refusing to attend homeowners meeting) "Replacing the Maclay Bridge is something that Missoula County has been discussing with the state and the citizens for almost 20 years. It is not a project that will happen for 5-10 years, so it is not urgent for us to pull together the information that we feel is needed to respond to questions being raised by your neighborhood." "There is no agreement with the state yet and no projected costs or time line," she said. "We have plenty of time." Public Works director Greg Robertson They notified us last year it's starting to rise to the top," Robertson said. "But it's still a long way out from happening. To me it's not a real big priority. I've got things that are more immediate that I need to be working on."	Thank you for your comments. They are included in our study records.

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60	Ryan	Zachariasen	Construction of new bridge on South is unnecessary; cost differential between a new bridge and upgrading the existing is substantial; greatly increased traffic; tax increases; property values decreased; safety of children is a high priority; road will need to be widened making traffic dangerously close to our homes as well; cons by far outweigh the pros.	Thank you for your comments. They are included in our study records.
61	Suzanne	Schweitzer	Supports rehabilitating Maclay Bridge; bridge does not cause deaths; people and how they drive, recreate, or use objects cause deaths; tired of emotional scare tactics that are totally unfounded.	Thank you for your comments. They are included in our study records.
62	Katie	Mikelsons	Supports rehabilitation of Maclay Bridge - to include a bike-ped lane and remaining one-lane for vehicles; makes sense monetarily; preserves character of old bridge and character of Maclay Flats area; why build a totally new bridge; why put added stress and pressure on the natural habitat; more and wider roads for cars will result in more cars on the road; put focus and attention into projects that decrease cars on the road and increase sustainable forms of transportation - such as public transportation, biking, and walking.	Thank you for your comments. They are included in our study records.
63	Deborah	Slicer	Does not support new bridge at South; existing bridge is safe; wait to cross is tolerable, no stream of traffic stresses the bridge, no issues with emergency vehicles crossing it, no danger to pedestrians or bikers; colossal waste of money; degrades Target Range neighborhood; potential negative impact on wildlife; new bridge affects rural character, quiet, and privacy of the Target Range neighborhood; Target Range is only neighborhood left in Missoula without busy, noisy highway, if a need in 30 years – deal with it then.	Thank you for your comments. They are included in our study records.
64	Marcia	Kircher	Pay close attention to the Target Range Neighborhood Plan – endorsed by Missoula County Commission; TRNP provides guidelines for a healthy, prosperous, and vigorous community; “Bridges: Continue Missoula County Public Works maintenance of the Maclay Bridge”.	Thank you for your comments. They are included in our study records.
65	Trevor	Williams	Supports rehabilitation of existing bridge; maintain the historic bridge; don't waste millions more; a project isn't necessary.	Thank you for your comments. They are included in our study records.
66	Chelsea	Chandler	Supports rehabilitation of existing Maclay Bridge; and adding a bike/pedestrian lane; least expensive plan is the best option; don't encourage more traffic in the area; area is prized for its safety, quiet and rural feel.	Thank you for your comments. They are included in our study records.
67	Vickie	Mikelsons	Favors rehabilitating the Maclay Bridge rather than replacing it with a new bridge extending from South Avenue; protects rural nature; discourage new roads being built and more vehicles from being on the roads; encourage more public and alternative transportation; increase the number and frequency of bus routes; encourage other alternatives such as car-pooling, walking, bicycling; rehabilitation of the existing bridge provides the added support needed to meet emergency vehicle weight/load requirements, plus a separated	Thank you for your comments. They are included in our study records.

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			pedestrian/bicycle crossing; Maclay Bridge adds historic and aesthetic value to our community and the Target Range neighborhood; Maclay Bridge acts as a calming device and slows traffic; say "no" to a new bridge and "yes" to rehabilitating the existing Maclay Bridge.	
68	Robert	Kircher	Planning study shows negative bias by implication and fact; ignores significance of the recent Target Range Neighborhood Plan endorsed by Missoula County Commissioners; overall narrative of the study pivots on a negative bias using data that is unexamined, poorly explained and lacking substance; crash data is general and vague - no report of incidents involving injuries, serious or fatal, or that any more than one vehicle was involved in any given incident; vast majority of daily traffic continues to move safely, courteously, calmly and without incident; unfortunate and disappointing that the Planning Team rejected the rehabilitation plan; refurbishing the existing bridge is consistent with a nearly unanimous community desire for such.	Thank you for your comments. They are included in our study records.
69	Dale and Carma	Bosworth	Maclay Bridge should be dismantled, piers removed and the bridge replaced with a modern two lane bridge off South Avenue; two separate studies have come to the same conclusion; planning team did listen to and consider input from the public on all sides of the issue; recommendation is sound and reasonable; South Avenue is the main arterial road and a crossing there would eliminate winding around and through several streets in the neighborhood; doubts that Maclay Bridge would survive a major flood event; current bridge has negatively affected the river channel over time and is a huge environmental problem; Maclay Bridge is unsafe; sound economics to use already collected federal tax funds rather than imposing mill levies on the community.	Thank you for your comments. They are included in our study records.
70	Anonymous	Anonymous	Keep Maclay Bridge as currently configured; supports addition of pedestrian lanes.	Thank you for your comments. They are included in our study records.
71	Cristin	Zachariasen	Opposes removal and rebuilding of the Maclay Bridge; will bring more traffic to the area; think about safety of school children; people blatantly disregard posted speed limits; do not want to see a new bridge put in.	Thank you for your comments. They are included in our study records.
72	Anonymous	Anonymous	Do not consider a project that is unnecessary, potentially harmful and will end up costing tax payers more; overwhelming facts support new bridge is not needed; new bridge on South would pose far more safety risks than existing bridge.	Thank you for your comments. They are included in our study records.
73	Whitney	??	Opposes new bridge at South Avenue; concerns about safety of a new bridge on a straight path along South Avenue across the river; believes costs are under-represented in the study; favors rehabilitation of the existing bridge at 1/10 the cost of a new bridge.	Thank you for your comments. They are included in our study records.
74	Jim	Roach	Planning report is heavily engineering oriented - bridge ratings, traffic flows, grid interconnections, traffic modeling algorithms; concerns of the local community	Thank you for your comments. They are included in our study records.

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			were heard but not particularly considered; concerned about losing unique character and environmental value rather than moving traffic through the neighborhood; concerned most with defacto bypass between US Highway 93 and Missoula; South Avenue west of Clements is not conducive to increased traffic flows; North Avenue seems less disruptive to the neighborhood character; existing Maclay Bridge presently meets our needs; bridge can be refurbished to accommodate 25 ton vehicles; protect special character of this historic neighborhood; current bridge serves as an effective traffic calming device and limits volume of traffic coming from US93.	
75	Brian (also forwarded by) Kathy	Riggers Armstrong	<p>Planning study is extremely biased towards new bridge at South; not enough important information from regulatory agencies has been obtained; commissioners are not being given an accurate portrayal of the total project costs; wetland mitigation costs should be added to the cost of a new bridge because somebody will have to foot the bill; FWP should have been contacted during the planning study; to actually "minimize these impacts to the extent practicable", FWP, along with regulatory agencies like USACOE and USFWS, should have been at the table from the beginning; County Floodplain Administrator or the Conservation District must be involved in study; on page 51 in the cost approximation section it was assumed that the bridge would be 20 feet past the river bank on both sides - so I would like to know which "river bank" is used for this approximation of the bridge span; USACOE and USFWS will have specific requirements for flows that the bridge will need to accommodate - I would like to know precisely what flow was used.</p> <p>How can you possibly conclude that the South Avenue new bridge options (3E.1 and 3E.2) would affect a shorter distance (not only shorter, but significantly shorter - to the extent of 7 for the existing and 2 and 3 for the new crossing proposals) than the existing bridge; ranking seems incredibly subjective and appears to be driven only by the objective of developing a study that supports a new bridge.</p> <p>Deeply concerned that Commissioners are not getting an accurate or unbiased study; they deserve better than that because their jobs are on the line; people of Missoula County deserve a fair process in making these types of decisions.</p>	<p>Thank you for your comments. They are included in our study records.</p> <p>The agencies you reference were engaged in the planning study. Refer to Appendix 1 for resource agency meeting participation and comments.</p> <p>River bank used correlates to the top of bank adjacent to the active channel. In areas where the channel was wide or not well defined, the digital 100-year floodplain limit(s) were used to calculate potential bridge length.</p> <p>Flood flows and corresponding events are shown on page 22 of the draft planning study report. No Hydraulic Engineering Center River Analysis System (HEC-RAS) modelling was performed for this planning study. However an approximation of bridge lengths was made relative to the extent of the 100-year floodplain limits.</p> <p>A digital Flood Insurance Rate Map (DFIRM) exists and was superimposed in Geographic Information System (GIS) mapping. The length of each alignment being considered was measured from one side of the 100-year floodplain to the other side and recorded. This is explained on page 51 of the draft planning study report and more fully in the Screening Process Memorandum in Appendix 1.</p>
76	Helen	Orendain	Opposed to to building a new bridge to replace existing Maclay Bridge; public communication was stifled; feasible improvements were ignored; Target Range Neighborhood Plan was disregarded; 2011 Montana Supreme Court decision, Heffernan vs. City of Missoula - proponents of the Rattlesnake Neighborhood Plan prevailed elevating the legal significance to such plans and governing bodies must substantially comply with the neighborhood plans.	Thank you for your comments. They are included in our study records.

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			<p>Public was misled on federal funding for rehabilitation of bridges; to buttress the argument to replace Maclay Bridge, the group claimed in the final proposal that federal funding was only available for replacement - this is wrong.</p> <p>Failed to inform public Maclay could be eligible for CTEP federal funding to rehabilitate the bridge; CTEP - Community Transportation Enhancement Program - provides federal funding for a variety of improvements including rehabilitating historic bridges; Maclay qualifies as a historic bridge but the funding was not disclosed to the public as an available resource by the planning group.</p> <p>Planning team focused on the bridge as an isolated project - avoids factoring the upgrade costs of the adjacent roads; two-lane bridge will create more traffic; cars will spill onto substandard, narrow winding roads; surfaces are slim with narrow width, no shoulders, inadequate room for bicyclists and runners; public needs total cost of a new bridge including the cost of road upgrades.</p> <p>Failure to upgrade substandard roads places residents in peril; road upgrade costs bored by Missoula residents; Missoula County taxpayers would be stuck with the cost; planning team report failed to provide an accurate, objective feasibility study and created a contrived report with the single purpose of supporting a new bridge.</p>	<p>Please see response to comment #13 for use of Federal funds for bridge rehabilitation.</p> <p>The Community Transportation Enhancement Program (CTEP) is no longer a federal funding program in the <i>Moving Ahead for Progress in the 21st Century (MAP-21)</i> federal transportation funding program.</p>
77	Anonymous	Anonymous	Opposes a new bridge; current need has not been shown; many safety concerns associated with a new bridge; supports rehabilitation option.	Thank you for your comments. They are included in our study records.
78	Anonymous	Anonymous	Likes traffic calming nature of the existing Maclay bridge; neighborhoods on east and west side of river are rural in nature - want to preserve this.	Thank you for your comments. They are included in our study records.
79	Carol	Kraft	Supports new bridge down South as the best long range decision; South Ave has always been a Main Street; go forward with planning for a new bridge on South Avenue.	Thank you for your comments. They are included in our study records.
80	Thea Ethel	Koehler	Pay close attention to the Target Range Neighborhood Plan - reflects the needs and desires of the community and provides guidelines for improvement of the Maclay Bridge.	Thank you for your comments. They are included in our study records.
81	Anonymous	Anonymous	Do not make it more unsafe to come to work by increasing traffic along South Avenue by adding a new bridge at the end of South Avenue.	Thank you for your comments. They are included in our study records.
82	Anonymous	Anonymous	Honor Target Range Neighborhood Plan; commissioners endorsed; take neighborhood concerns into account; neighborhood does not want a new bridge; few in favor of a replacement bridge live adjacent to the old bridge; data on motor vehicle accidents and drownings have been inaccurately reported.	Thank you for your comments. They are included in our study records.

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83	Anonymous	Anonymous	Opposes new bridge in pristine area of the Bitterroot River; why disrupt two areas of the river; there is no acute need - only a possible need; existing bridge can be rehabilitated.	Thank you for your comments. They are included in our study records.
84	Anonymous	Anonymous	Did the study take into account how much more it would cost to upgrade South Avenue and River Pines Road? Did the study look at existing easement available at the existing Maclay Bridge site for a rehabilitation option?	Thank you for your comments. They are included in our study records. Costs for upgrading South Avenue between Hanson Drive and Clements Road were accounted for and are shown on page 61 of the draft planning study report. Upgrades to River Pines Road are not envisioned, therefore upgrade costs associated with the facility are not included. The study did examine availability of right-of-way for the seven options, including rehabilitation (see page 53-56 of the draft planning study report).
85	Anonymous	Anonymous	Concerned about potential increased traffic on South Avenue if a new bridge is built; already dangerous to turn onto or off of South; same concern at Big Sky and Target Range schools; new bridge puts senior citizens and school children at increased risk.	Thank you for your comments. They are included in our study records.
86	Lois	Schelvan	Keep Maclay Bridge at current location; current summer activity is not a concern compared to noise generated by new bridge; concern over increase traffic due to South bridge; upgrade existing bridge for a lower price tag; neighborhood does not need a new bridge; existing bridge acts as a traffic calmer; spend money on developing the small county park that exists on the east side of the river right at Maclay Bridge.	Thank you for your comments. They are included in our study records.
87	Anonymous	Anonymous	Study seriously flawed in its methodology; unsound scoring system; tilted the playing field toward the new South bridge and against the Maclay rehabilitation option; for majority of people in community priority is to maintain safety and character of the area – not to move as much traffic through the area as “efficiently” as possible; concerned about degrading the area, diminishing overall safety, and significantly increasing noise and air pollution along South Avenue.	Thank you for your comments. They are included in our study records. Ranking process completed by Planning Team was reviewed within the context of other pre-NEPA/MEPA Planning Studies and found to be appropriate for the noted purpose. Suggested edits and opinions are noted, however revisions did not change outcome. There are numerous processes available to screen options.
88	Anonymous	Anonymous	Provide safe, effective travel over river in a way that meets the needs of the community - but is of a size and scale appropriate to our rural setting.	Thank you for your comments. They are included in our study records.
89	Anonymous	Anonymous	Members of the public could attend planning team meetings, but were not allowed to speak; requests for information from the planners along the way were deflected or denied; Target Range Neighborhood Plan (TRNP) was discounted;	Thank you for your comments. They are included in our study records.

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			option to rehabilitate Maclay Bridge was consistently downgraded; rehabilitation option was split by the planners into two extremes, both seemingly destined for elimination; a "middle" option of fixing the Maclay Bridge in place to standards which would accommodate all vehicles safely and for which a plan already exists (the Muth Plan) was not seriously considered; planners violated their mandate to identify financially feasible alternatives that address the needs and objectives defined by the community.	
90	Deborah	Talarico	Area would be adversely affected by a new bridge; maintain the existing bridge; no amount of studies would negate the obvious risk on children by encouraging increased traffic on South; there is not now a traffic problem at the bridge but if you build it, they will come.	Thank you for your comments. They are included in our study records.
91	Willis	Curdy	Target Range Neighborhood Plan emphasized safety and consistency with what residents desire - report contradicts values held by residents; building a replacement bridge at the west end of South Avenue will create a safety hazard; existing provides a significant calming function; new South bridge will bring more individuals and commercial vehicles as a bypass; welfare of students will be compromised; safety of residents living along South Avenue and River Pines Road will be compromised; Blue Mountain and Big Flat Roads will see additional traffic; increased traffic/wildlife encounters can be expected; both roads are heavily used by bicycle and pedestrian traffic; probability of a fatality will increase with higher volumes of traffic on these substandard roads. Proposed bridge location transfers and expands safety concerns; jeopardizes the health and welfare of more individuals and local residents; TR residents are skeptical of planning study report, and challenge its findings.	Thank you for your comments. They are included in our study records.
92	Anonymous	Anonymous	Concerned about length of floodplain impacted by proposed South bridge; existing bridge has approaches that are better protected from high flooding; concerned by increased traffic, noise and pollution immediately adjacent to a wetland; road areas have high deer traffic; corridor for osprey and eagles - concerned about impact of increased noise and traffic exhaust on these species; concerned about the effect on the trout fishery if an additional area of the river is disturbed.	Thank you for your comments. They are included in our study records.
93	Marjie	Heyman	Questions need for a new bridge; Maclay Bridge is a historical artifact; not so much traffic on the bridge that there are long waits; curving road approaches to bridge slows down traffic - a benefit; almost always a shift in channel topography when any bridge is built; people will continue to use the area if bridge is removed; keep Maclay Bridge and use the money to redo the Russell Street bridge; give stiffer fines to those who illegally park near Maclay Bridge.	Thank you for your comments. They are included in our study records.
94	Anonymous	Anonymous	Study does not accurately reflect the impact on the floodplain or the amount of fill required for the east side approaches to the proposed South Avenue bridge;	Thank you for your comments. They are included in our study records.

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			residences could be impacted adversely; fields west of Hanson Drive flood each spring; proposed bridge approaches lie within the floodway of the flood plain; floodway starts near Hanson Drive and extends 1,000 feet from the existing banks and another 200-300 feet of floodplain (flood fringe); banks around approaches to existing bridge are already protected with riprap; can't be removed as some residences near Maclay Bridge would flood without that protection.	
95	Linh	Hoang	<p>Information in study appears biased towards a pre-determined recommendation; study's needs and objectives, screening criteria, and final recommendations were developed based on incomplete information; data used is misleading to the public and County Commissioners; no rational connection between the data provided and the findings and recommendations of the plan; report is fundamentally flawed due to data and lack of context; overlooks relevant information.</p> <p>Attributing crashes to one lane bridge arbitrary and capricious; one lane bridge is a calming device and slows traffic; arbitrary and capricious to infer that the one lane bridge is contributing to crashes; potential crash mitigations could be implemented at the existing location at far less taxpayer expense; would help to compare the crash data with other bridges in Missoula.</p> <p>Assume travel time discussion supposed to support assertion to reduce delay times for emergency responders; question needs statement that states that reducing delay of emergency vehicles is needed; missing context and information relevant to the discussion:</p> <ul style="list-style-type: none"> • How often and for what time periods has Maclay Bridge been inaccessible in the past? • Has inaccessibility of the bridge reduced response time in the past that has caused concern from the emergency response providers? • Have the emergency response providers in our community raised concerns about their response time when crossing this bridge in the past? • Is Community Medical the only medical facility that responds to emergency on the other side of the bridge or does St. Patrick's also commonly respond? <p>Study states "single-lane width of the bridge is sub-standard for current traffic volumes" – need additional information:</p> <ul style="list-style-type: none"> • The study does not discuss the regulatory requirements to meet American Association of State highway Transportation Officials (AASHTO) standards or whether these "highway" standards should be applicable or comparable to collector bridges such as Maclay Bridge. 	<p>Thank you for your comments. They are included in our study records.</p> <p>Emergency calls of a fire and medical nature dictates that a timely response is required. In some cases, just a few minutes can make a big difference. The area served via the Maclay Bridge, Big Flat, O'Brien Creek and Blue Mountain, now must be accessed by going around Blue Mountain Road due to Maclay Bridge load restrictions (for larger vehicles). This adds five minutes or more to response times.</p> <p>Any expenditure of federal or state funds requires compliance with relevant design standards. American Association of State Highway Transportation Officials (AASHTO) bridge width standards allow a single-lane bridge only for very low volume roads in which traffic is less than 100 vpd. Design exceptions are allowed very minimally in very unique circumstances, but not if the fundamental deficiencies will not be rectified.</p>

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			<ul style="list-style-type: none"> Is this a discretionary standard or is it a regulatory requirement of all bridges? Why is it OK to have one lane bridges anywhere if this is a standard that is non-discretionary? The study fails to discuss design exceptions that permit decision makers to allow for relaxing standards for off-system routes. <p>Study uses need for providing future capacity demands as one of the screening criteria:</p> <ul style="list-style-type: none"> Does it mean that traffic needs to flow at a certain rate? Or the bridge needs to be able to handle a certain load for a certain amount of use during a day? Does it mean to control unreasonable delays? What is this hourly rate that the Target Range Neighborhood wants? Is this rate different from what the County or State wants? A two lane bridge would undoubtedly increase this rate, but is this what the community wants? Is it acceptable for the community, the State, and County Commissioners to meet the increase in traffic growth by maintaining the rate of flow as it is now or even decrease the rate of flow? What statute or other driver is creating a need to increase the rate of flow through the Target Range Neighborhood? <p>Planning construction cost screening criteria failed to consider variable costs (such as right-of-way acquisition, project development activities, environmental mitigations); some of these costs were included in Section 6.2, but should have been included as part of the screening criteria; these other costs (in addition to the cost of approach road upgrades/maintenance) were not considered in the criteria without explanation; County Commissioners could appear fiscally irresponsible when making a decision regarding where to go with this study plan.</p> <p>Planning Study will not allow for an easy transition into an environmental review process that would be consistent with the National Environmental Policy Act (NEPA); guidance for how MDT links planning study process with NEPA is provided in "Montana Business Process to Link Planning Studies and NEPA/MEPA Reviews" (MDT, 2009). Several inconsistencies are noted with the Maclay Bridge Planning Study process and the process outlined in the above document; process was misapplied because screening of the options and recommendations was conducted prior to public input on these criteria.</p>	<p>The Missoula Long Range Transportation Plan (LRTP) contains guidance on theoretical general daily road capacities (Average Annual Daily Traffic - AADT) for different types of roadways. These values are contained in the 2008 LRTP, Table 6-1. Features that inform theoretical capacities are road lane configuration, functional classification and whether the road is in a rural or urban locale. The <i>TransCad</i> travel demand model is used to examine future AADT volumes during the planning year. Model results, which are adjusted to reflect known base volumes, are then compared to the theoretical general daily road capacities. Links that exceed planning level thresholds may be "over capacity", while links that are under planning level thresholds may be "under capacity". Please refer to table 14 on page 61 of the draft planning study report.</p> <p>The Montana Business Process guidelines are guidelines, and have inherent flexibility as each planning process is unique. The Maclay Bridge Planning Study substantially complied with the processes and intent of the Montana Business Process guidelines.</p>
96	Dana	Headapohl	Issues are not accurately addressed in study; fields west of Hanson Drive flood each spring - altering natural flow would impact aquatic resources; most of proposed approach lies within the floodway; floodway starts right around Hanson Drive; study does not accurately reflect the impact on the floodplain or the amount of fill required for the east side approach; additional fill results in an	Thank you for your comments. They are included in our study records.

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			artificial barrier to normal flood flow; would impact residences to the south of the roadway and possibly septic systems; banks around approaches to existing bridge are already protected with riprap - cannot be removed as some residences near bridge would flood; why impact yet another portion of the Bitterroot River.	
97	Charles	Stevenson	Safety to the public should be the top concern; existing bridge approach distances and alignments are dangerous; existing bridge has no walk/bike lanes on the bridge or on the west side of the river; existing bridge load limits are inadequate for emergency vehicles and school buses; Maclay Bridge should be replaced; two studies for Maclay Bridge ended with same result; stop wasting money - move forward.	Thank you for your comments. They are included in our study records.
98	Peggie Dave	Morrison Loomis	MCA 76-1-605 states Governing Body...must be guided by and give consideration to...the growth policy – which may include one or more neighborhood plans; believes planning study does not comply with MCA 76-1-605. A neighborhood plan must be consistent with the growth policy; study flagrantly disregards Target Range Neighborhood Plan; Board of County Commissioners adopted the Target Range Neighborhood Plan; Neighborhood Plan is an essential part of the county-wide Growth Policy; Neighborhood Plan not given adequate consideration. Neighborhood Plan did not identify a need for a new bridge; new bridge at South would increase traffic past the schools, hospital, and residences which would cause a decrease in air quality and increase safety issues for pedestrians, school children, residents attempting to gain access to South Avenue from their driveways, and wildlife; existing Maclay Bridge is a remarkable traffic-calming device; residents value the character of neighborhood; Maclay Bridge is the epitome of our expressed desire to live in a rural and semi-rural environment: "Rural by Design".	Thank you for your comments. They are included in our study records.
99	Willis	Curdy	Cost of reconstruction of South Avenue from Clements Street to Hanson Drive would be the obligation of Missoula County taxpayers - significant burden on all county taxpayers; report failed to analyze several other key fiscal obligations that would encumber Missoula County taxpayers if a South Avenue bridge were built – River Pines, Big Flat, Blue Mountain Roads; Missoula County taxpayers will encounter additional obligations to maintain or reconstruct portions of each road; rehabilitation of Maclay Bridge is the most fiscally prudent option; report fails to fully identify the financial burden created by the proposed construction of a new bridge; rehabilitation of the current bridge is in the best interests of Missoula County.	Thank you for your comments. They are included in our study records.
100	Kathleen	Harvey	Majority in community want rehabilitation of existing Maclay Bridge; study is biased to produce new bridge result; don't spend beyond our means.	Thank you for your comments. They are included in our study records.

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101	Fred	Stewart	Data generated by the Traffic Demand Model for the Maclay Bridge Study are illogical and thus an unreasonable basis for imposing the negative impacts of any new bridge on the Target Range/Orchard Homes communities; if a new bridge is built now, the negative impacts on the community are not hypothetical, but real, beginning immediately, and they are irreversible; travel demand model (TDM) used is a "black box" that is used to predict traffic volumes 30 years in the future; an increase in traffic at the corner of South Avenue and Clements in front of Target Range School is a major safety concern; negative impacts of a new bridge are both very large and unwelcome by the residents.	Thank you for your comments. They are included in our study records.
102	?????	Susott Family	Support fixing the current bridge; a new bridge would ruin the feeling of Target Range; don't want South Avenue becoming a superhighway right in front of my child's school.	Thank you for your comments. They are included in our study records.
103	Larry	Martin	Public input ignored; public could attend planning team meetings but were not allowed to speak; Target Range Neighborhood Plan (TRNP) largely discounted as was the opposition of the public to a new South Bridge expressed in every meeting about the bridge in the last 19 years; county commissioners must listen to the public; rehabilitation option consistently downgraded; new bridge will increase traffic and make safety worse; evidence unconvincing that Maclay Bridge itself lends to safety problems; costs in study are flawed and incomplete; no mitigation costs for environment, South Avenue widening, etc.; unclear which costs would be eligible for federal funding and which would not; study characterized by a professional statistician as "nonsense" and flawed; Long standing deep public opposition to a new South bridge; increased safety hazards with a bridge; serious environmental degradation - especially noise and air pollution; uncertain but very high costs; lack of public input into the planning process; serious methodological flaws in the study design and execution; postpone a decision about how to proceed.	Thank you for your comments. They are included in our study records.
104	Harold	Ott	Concern over apparent ignoring of rehabilitation alternative; lower cost than new bridge; concern over ignoring Target Range Neighborhood Plan – approved by county commissioners; many shortcomings, omissions, and errors in the study; disappointed with public process; study doesn't address critical issues created by a new 2-lane bridge; needs more assessment of community impact from Reserve Street to the new bridge; urges support of rehabilitation.	Thank you for your comments. They are included in our study records.
105	Myles	Morris	Opposes proposed new bridge on South; proposed South bridge is a solution looking for a problem; existing Maclay Bridge could use some upgrades, but is appropriate for the rural neighborhood and long range community plan; rehabilitation is lower cost; doesn't understand proposing a thoroughfare past elementary school through a rural community; must reconsider findings of report.	Thank you for your comments. They are included in our study records.
106	Suzanne	Schweitzer	Supports rehabilitating Maclay Bridge; TR is a rural, agrarian, community that is	Thank you for your comments. They are included in our study records.

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			still close to the city; Missoula does not need more concrete and bridges or higher speed roads; preserve and protect the natural habitat and rural environment around Missoula before it's too late.	records.
107	Anonymous	Anonymous	Need for new bridge is not justified; will be a high-traffic, semi-truck thoroughfare; safety is a concern on the east side of the bridge; high traffic volume and speed are unnecessary dangers to add to South Avenue; Maclay Bridge can be maintained in a status which serves the community very adequately.	Thank you for your comments. They are included in our study records.
108	Anonymous	Anonymous	Supports keeping the old Maclay Bridge; repairing the bridge is lower cost and efficient; government should stop spending money; tired of property taxes going up; old bridge will be fine to repair for \$1 million.	Thank you for your comments. They are included in our study records.
109	Bernard	Constantin	Supports rehabilitating existing bridge and adding pedestrian bridge; cost lower; maintains rural character; keeps traffic slow; avoids making a major arterial; preserves recreation; rationale developed in report is suspect; complete lack of regard for a pleasant environment.	Thank you for your comments. They are included in our study records.
110	Constance	Nichol	Opposed to relocating Maclay Bridge; moving bridge upstream will create another "attractive nuisance"; no need to spend large amount of money; need more access to the rivers on public property; improve Buckhouse Bridge access; repair Maclay Bridge - beautiful landmark.	Thank you for your comments. They are included in our study records.
111	Teresa	Thompson	Opposes replacement of the Maclay Bridge; South Avenue will become a by-pass and high speed route; would travel past schools; new bridge traffic flow will negatively affect neighborhood; additional traffic lights will be needed with proposal; current bridge is safe and does not require replacement; configuration contributes to our neighborhood by calming traffic; new bridge would be placed in a sensitive river habitat area; would have an adverse affect on fish and wildlife; noise pollution would adversely affect recreation on the river; replacement is unnecessary.	Thank you for your comments. They are included in our study records.
112	Emily	Downing	Supports rehabilitation of existing bridge; better use of taxpayer money.	Thank you for your comments. They are included in our study records.
113	Oleke	Rappe-Daniels	Supports recommendation of the planning study and the 1994 EA to build a new bridge on the west end of South Avenue; concern for the reliability of the current bridge into the future and its implications on public safety; Target Range Neighborhood Plan does not represent the interests of all the citizens; survey was not returned by all the 1000+ TR residents, just a few hundred; TRNP did not explore the bridge and the issues associated with its viability; new bridge would shift traffic from meandering throughout side streets to get to North Avenue to mainly South Avenue; traffic in front of homes on South Avenue would increase; rural character of neighborhood should include the entire	Thank you for your comments. They are included in our study records.

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			<p>neighborhood and not just the residents who live on South Avenue; does not agree that new bridge will create another "recreation" site; current bridge degrades environment of Bitterroot River.</p> <p>Study team did a good job of corridor analysis; listened to and considered input from the public on all sides of the issue; recommendation is sound and reasonable; two studies by two different groups reached the same conclusion; current bridge and its approaches are inherently unsafe, unreliable, environmentally damaging and is a liability; it is an attractive public nuisance that has contributed to drowning, injuries and automobile accidents.</p>	
114	Jill	Alban	<p>Displeased with findings of the planning study; disagree with selected preferred option; oppose new South Avenue bridge; community is being pushed on this project to use federal funding; community overwhelmingly opposes using millions of federal dollars to construct a new bridge; will be detrimental impacts to community and local ecosystems; dispute the extent of current problems with the existing bridge; federal dollars can be used to re-hab an existing bridge; new bridge will re-route commuter traffic through a small neighborhood; northern Bitterroot River is an IBA (Important Bird Area) and designated critical habitat for Bull Trout; new bridge is unfounded, unnecessary, lacks community support, and will result in a backlash for local elected officials who may try to push something through.</p>	<p>Thank you for your comments. They are included in our study records.</p> <p>Please see response to comment #13 for use of Federal funds for bridge rehabilitation.</p>
115	Ed	Bartels	<p>Strongly supports new bridge at the western terminus of South Avenue; remove old bridge, in-stream piers and abutments; old bridge is an agglomeration of spans which have outlived their usefulness; residents west of the river deserve a reliable bridge across the Bitterroot.</p>	<p>Thank you for your comments. They are included in our study records.</p>
116	Don	St. Peter	<p>Proceed with a new bridge at South Avenue without going through a completely new NEPA process; do not need another study - need to start actual bridge planning; South Avenue does not equate with Target Range - they are not synonymous; neighborhood concerns of South Avenue residents should not be conflated to be the concerns of all of Target Range; Target Range community, other than South Avenue, will be substantially improved by a new bridge at South Avenue; applauds the planning team's work and efforts; two studies done decades apart by different groups came to the same conclusion; MacLay Bridge Alliance does not represent the best interests of the general community; MBA represents narrow interests of a few landowners on South Avenue; puzzled that Mount Avenue could be considered in this process; Mount Avenue route would be inefficient and not fix the accident cluster on River Pines Road.</p> <p>Screening assessment shows an increase in traffic at Target Range School from a South Avenue Route; much of that increase in traffic represents traffic that is currently going to and from Target Range School over either Humble or Clements Road from North Avenue; Missoula has many schools on major</p>	<p>Thank you for your comments. They are included in our study records.</p>

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			streets; all 3 high schools are located on major streets; so are a number of elementary schools, including Russell School, C.S. Porter, St. Joseph School, and Hawthorn.	
117	Michael and Nancy	Chandler	Report has many deficiencies; safety and cost are primary shortcomings; new replacement will not improve safety; costs for new bridge are not correct and are too low; South Avenue will need to be widened with traffic control and other slowing devices; supports rehabilitation proposal for rebuilding the Maclay Bridge by a qualified bridge engineer; addresses weight limit concerns, includes separate bike/hiker path, and costs under one million dollars; should have the choice of preserving and improving the existing historical bridge; supported by a large majority of the local people and Target Range Neighborhood Plan; current proposal would decrease many property values and soon increase county taxes.	Thank you for your comments. They are included in our study records.
118	Jim and Anita	Jakob	Supports rehabilitation of the Maclay Bridge; opposed to a new bridge at the end of South; must maintain rural quality of neighborhood; don't need Big Flat Road to become a bypass.	Thank you for your comments. They are included in our study records.
119	George	Schreiner	Existing Maclay Bridge is a good traffic control device; west side approach offers excellent visibility; 90 degree turn regulates vehicle size and rate of travel crossing the bridge; pedestrian crossings should be included as part of a traffic solution; wireless camcorders are reasonably priced and the information is smart phone accessible; along the Blue Mountain-Big Flat corridor property damage and personal injury on private property can be attributed to vehicle speed, commercial carriers using motor brakes, and poor (or no) shoulder compaction; Missoula has a north-south traffic problem and not east-west; simply maintain the current area and the bridge.	Thank you for your comments. They are included in our study records.
120	Lloyd	Acker	Second study has come to same conclusion as 1994 EA; conclusion not popular with people living on South, but must meet future traffic needs; either abide by recommendations in two studies or kick the can down the road; rehabilitation option does not meet future traffic needs; rehabilitation option does not answer many of the safety issues; study did not address hydrology of river resulting from the placement of the bridge; bridge properly constructed at the South 1 location would result in no significant eroding of the river bed below that location; current bridge has a limited life expectancy.	Thank you for your comments. They are included in our study records.
121	Sandra	Acker	Do not think building a 2 lane bridge at the end of South Avenue will increase the traffic; will move it more efficiently; there is an easement for the purpose of building a bridge at the end of South; plan for the future and for the growth that comes with it.	Thank you for your comments. They are included in our study records.
122	Kari	Britain	Keep the Maclay Bridge at the present site; upgrade the bridge for structural needs and maintenance; provide and attach a pedestrian/bike path to the bridge - these seem to be the only deficiencies.	Thank you for your comments. They are included in our study records.

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123	Orville	Daniels	<p>Focus on three principle criteria - public safety, environmental sustainability and the actual facts of the situation; opinions and emotions should not outweigh the three criteria; everyone is entitled to their own opinion but are not entitled to their own version of the facts; advocates removal of the existing bridge, piers and abutments; existing bridge is unsafe and unreliable - the bridge cannot be modified in a way to eliminate these problems.</p> <p>Maclay family donated an easement at the end of South Avenue because the old timers knew it was where a bridge should be; best location for a bridge across the river is at the end of South Avenue; it is time to implement the recommendations of the study group and take steps to build a bridge at the end of South Avenue; further delay will result in higher costs and perhaps loss of gas tax funds.</p>	Thank you for your comments. They are included in our study records.
124	Helen (Comment also previously submitted on February 21, 2013)	Orendain	<p>Opposed to to building a new bridge to replace existing Maclay Bridge; public communication was stifled; feasible improvements were ignored; Target Range Neighborhood Plan was disregarded; 2011 Montana Supreme Court decision, Heffernan vs. City of Missoula - proponents of the Rattlesnake Neighborhood Plan prevailed elevating the legal significance to such plans and governing bodies must substantially comply with the neighborhood plans.</p> <p>Public was mislead on federal funding for rehabilitation of bridges; to buttress the argument to replace Maclay Bridge, the group claimed in the final proposal that federal funding was only available for replacement - this is wrong.</p> <p>Failed to inform public Maclay could be eligible for CTEP federal funding to rehabilitate the bridge; CTEP - Community Transportation Enhancement Program - provides federal funding for a variety of improvements including rehabbing historic bridges; Maclay qualifies as a historic bridge but the funding was not disclosed to the public as an available resource by the planning group.</p> <p>Planning team focused on the bridge as an isolated project - avoids factoring the upgrade costs of the adjacent roads; two-lane bridge will create more traffic; cars will spill onto substandard, narrow winding roads; surfaces are slim with narrow width, no shoulders, inadequate room for bicyclists and runners; public needs total cost of a new bridge including the cost of road upgrades.</p> <p>Failure to upgrade substandard roads places residents in peril; road upgrade costs bored by Missoula residents; Missoula County taxpayers would be stuck with the cost; planning team report failed to provide an accurate, objective feasibility study and created a contrived report with the single purpose of supporting a new bridge.</p>	<p>Thank you for your comments. They are included in our study records.</p> <p>Please see response to comment #13 for use of Federal funds for bridge rehabilitation.</p> <p>CTEP is no longer a federal funding program in the <i>Moving Ahead for Progress in the 21st Century (MAP-21)</i> federal transportation funding program.</p>
125	Silke	Jauck	Renovate current Maclay Bridge - meets or exceeds all current and future load requirements; rehabilitation costs a fraction of new bridge; new bridge costs are	Thank you for your comments. They are included in our study records.

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			incomplete and do not take into consideration additional costs such as roadway upgrades, ditch relocation, traffic control measures, etc.; against new South Avenue Bridge; existing Maclay Bridge can be reinforced to a proper load limit; no need to replace Maclay Bridge.	
126	Kathy	Armstrong	Report has many deficiencies; safety and cost are primary shortcomings; new replacement will not improve safety; costs for new bridge are not correct and are too low; South Avenue will need to be widened with traffic control and other slowing devices; supports rehabilitation proposal for rebuilding the Maclay Bridge by a qualified bridge engineer; addresses weight limit concerns, includes separate bike/hiker path, and costs under one million dollars; should have the choice of preserving and improving the existing historical bridge; supported by a large majority of the local people and Target Range Neighborhood Plan; current proposal would decrease many property values and soon increase county taxes.	Thank you for your comments. They are included in our study records.
127	Frank	Muth	Most bridges in western Montana and Idaho of style similar to Maclay Bridge have been replaced because the overhead elements destroyed – due to movement of commodity to market (logs); Maclay Bridge not used in this fashion; piers and bents are founded on driven pile; main pier founded on timber pile encased in concrete seal; this system provides resistance to extreme flood flows as well as live and dead load support; draft study did not provide rehabilitation option - MBA responsible for details; study team not included the rehabilitation option; rehabilitation option meets most of the objectives identified as important in this study - while protecting the character of the community.	Thank you for your comments. They are included in our study records.
128	Scott	Bair	Strongly disagrees with report recommendation to build a new 2-lane bridge at the extension of South Avenue; believes report is faulty on estimates of future traffic, county-caused deterioration of the existing bridge and inadequate consideration of the neighborhoods; does not believe traffic forecasts are valid; traffic on Blue Mountain and Big Flat roads is limited by reduced speed limits, narrow lanes, abundant wildlife and a winding course next to the Bitterroot and Clark Fork rivers; existing Maclay Bridge serves as a “calming” influence on traffic in this area - calming will be completely absent with the proposed new bridge. New bridge will be most likely cause of increased traffic; major driving force for replacing the Maclay Bridge is the deterioration of the structure; County has not maintained or attempted to rehabilitate the bridge in nearly a decade; large outlays of County/State funding will be necessary to procure land, create approaches and complete other portions of the bridge replacement; there is nothing free about federal funding; prefer my taxes to be used to rehabilitate the bridge. County has moral and legal obligation to follow the Target Range Neighborhood Plan; TRNP approved by the County; recent Montana Supreme Court decisions reflect that approved neighborhood plans are legally binding documents; quality of life will be drastically reduced by additional high speed, heavy load traffic	Thank you for your comments. They are included in our study records.

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			generated by the new bridge; safety of school children will be significantly reduced; reject the recommendation for a new bridge; rehabilitate existing Maclay Bridge.	
129	Bob	Schweitzer	<p>Study failed to achieve its stated purpose; did not identify the connected costs associated with a replacement bridge; costs on the west side of the river have not been addressed; needs and objectives were not defined by the community, study partners, and resource agencies - study report failed; Target Range Neighborhood Plan made very clear that a new bridge was neither necessary nor wanted; environmental resources not adequately studied; brevity of environmental resource analysis indicates obvious need for an Environment Impact Statement (EIS) if the South Avenue Bridge option is selected; costly and time consuming process - likely to require several years; additional studies will disclose unmentioned mitigation measures that could substantially increase costs and delays in design and construction; needs and objectives for this study were derived by the study planning team, not public; derivations shaped more by perspectives as engineers than by public input.</p> <p>Only three options to consider - all others have been relegated to back seat roles; first option - Muth rehabilitation, second option - pure engineering solution in the form of a replacement bridge, third option - do nothing; third option is preferable to the second.</p>	Thank you for your comments. They are included in our study records.
130	Monica	Weisul	Disagrees with presentation of crash data in report and subsequent nexus between crashes and safety issues at/near existing bridge; there has been no maintenance work on Maclay Bridge for the last seven years; does not support replacement bridge at South Avenue.	Thank you for your comments. They are included in our study records.
131	Patricia	Thomas	Disappointed by report recommendation; report does not fully considered rehabilitation of the existing bridge - substantially lower cost; does not believe future traffic forecasts; Blue Mountain/Big Flat is scenic drive in Missoula; don't turn this area into a high-speed, high-volume traffic corridor; include additional 3- or 4-way stop signs on South Avenue near Big Sky High School and Target Range Elementary School, such as at Tower, Clements and Humble Streets, and reduced speed limits; impose weight/load restrictions on Blue Mountain and Big Flat Roads; undertake a study of weight limitations on those roads.	Thank you for your comments. They are included in our study records.
132	Tom	Stuckey	Opposes new bridge at South; will negatively impact neighborhood characteristics; do not change the location of the Maclay Bridge.	Thank you for your comments. They are included in our study records.
133	Gene	Thompson	Lots of changes in Missoula valley driven by construction of new or replacement bridges (Madison Street, Reserve Street and Kona Road); a new bridge off the end of South Avenue will have profound effects on travel entering Missoula from the Bitterroot Valley; if you build it they will come; screening process flawed; no consideration to the Target Range Neighborhood Plan; suggesting a new bridge	Thank you for your comments. They are included in our study records.

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			is a major flaw in the process.	
134	Ginny	Fay	Opposed to a new bridge being constructed; favors option 2b - major rehabilitation of the existing structure; current traffic volume does not warrant building a new bridge; severe impact on the residents in nearby areas; rehabilitation is better use of public funds; provides greater safety improvements; new bridge along South will be a major impact to neighborhoods, riparian habitat, student and school safety; will increase traffic and speeds through the area; do better transportation planning rather than continue to compound problems; planning report does not reflect the considerable opposition to the new bridge expressed repeatedly by area residents.	Thank you for your comments. They are included in our study records.
135	Anonymous	Anonymous	A new bridge for a direct shot from South to Blue Mountain Road is scary; environmental impact will be major; it will be another easy avenue for the children who are driving drunk to get up onto Blue Mountain Road instead of driving onto South Hills. Has anyone done a study on the wildlife out in that area?	Thank you for your comments. They are included in our study records. A wildlife specific study has not been completed. This resource study, typically referred to as a Biological Resource Report (BRR) would be completed as part of the NEPA/MEPA process if a project is developed.
136	Fred	Stewart	Screening criteria poorly developed and biased to new bridge; no feasible rehabilitation option considered; criteria relative to Target Range Neighborhood Plan suggested but ignored; draft study does not follow Montana Business Process guidelines; Missoula County Commissioners are left with an incomplete and flawed document - with an invalid recommendation to build a very costly bridge; adversely impacts the local community; lack of supporting information for a rehabilitation option presented by the community.	Thank you for your comments. They are included in our study records. Criteria related to the TRNP was initially considered, along with criteria representative of other County and regional planning documents. Unfortunately, these documents conflict with each other, and the Planning Team elected to not develop criteria associated with the TRNP, regional TP, Growth Policy, active TP, etc. – due to the inherent conflicts found in each document. The Montana Business Process guidelines are guidelines, and have inherent flexibility as each planning process is unique. The Maclay Bridge Planning Study substantially complied with the processes and intent of the Montana Business Process guidelines.
137	Brent	Esmoil (USFWS)	Wolverine was proposed for listing as a threatened species on February 4, 2013; Bitterroot and Clark Fork Rivers, and O'Brien Creek, are designated bull trout critical habitat - used by bull trout for foraging, migration, and overwintering; consider (1) that new crossing covers at least 1.5 times the bankfull width to ensure passage of fish and debris through the system, (2) use of single-span bridge to maintain the river's long-term aquatic functions, (3) keeping temporary disturbances to the channel to the minimum extent and duration possible and (4)	Thank you for your comments. They are included in our study records. "Section 3.4.4.2 – Threatened and Endangered Wildlife Species", located on pages 27 and 28 of the draft planning study report, has been modified to clarify that the Wolverine was proposed for listing as a threatened species on February

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			<p>removing the existing Maclay Bridge, piers, and abutments to restore natural functions to that portion of the river.</p> <p>MBTA prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted; MBTA has no provision for allowing unintentional take; any future cutting of trees or shrubs should occur between August 16th and April 30th; should the Maclay Bridge be removed, we recommend: (1) the removal occur between August 16th and April 30th; or (2) the structure be netted to prevent occupancy by migratory birds during the nesting season; or (3) nests be removed as they are constructed, but prior to egg laying and incubation.</p> <p>With respect to bald eagles, any action that may be proposed is obligated to comply with BGEPA. Therefore, we recommend that the Department coordinate with Montana Fish, Wildlife & Parks (1420 East Sixth Ave., P.O. Box 200701, Helena, MT 59620-0701, 406-444-2535) prior to initiating any project construction. Should occupied eagle nests occur within 0.5 mile of a proposed site, we would advise that you comply with the recommended temporary seasonal and distance construction buffers stipulated in the 2010 Montana Bald Eagle Management Guidelines: An Addendum to Montana Bald Eagle Management Plan (1994).</p>	4, 2013.
138	William	McDowell	Supports community's bridge rehabilitation option; recommendation for a new bridge is poorly justified; major flaws in the study exist.	<p>Thank you for your comments. They are included in our study records.</p> <p>Received after end of official comment period</p>
139	Wayne	Davis	Adamantly opposed to the project as proposed in the planning study; current bridge is fine; obviously needs some updating but replacement is not needed; new bridge would have a significant negative impact on the character of the neighborhood; cost of project is not justifiable in our current fiscal situation; support affordable alternative with rehabilitation of the bridge with placement of walking and biking attachments; build less roads and put our limited resources towards alternative forms of transportation.	<p>Thank you for your comments. They are included in our study records.</p> <p>Received after end of official comment period</p>
140	Jim	Akers	Represent the 'everyday' person; look out for them and the children that they entrust to the school buses every day; bridges do fail; walk under the current bridge and look at it - not a question of if it will fail but only when; it has been quite some time since a P.E. has done a full scale inspection; residents pick up	<p>Thank you for your comments. They are included in our study records.</p>

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			litter – clothes, hypodermic needles, alcohol containers, etc.; police free zone - law enforcement won't go; there will be another bridge related drowning if the bridge remains; perhaps an expensive law suit will burden the taxpayers of the county; timely emergency response is being denied; not prepared for large scale emergency evacuation; funding for new bridge is available – don't let it escape; heed recommendation of two studies done years apart.		
141	Fred & Kathy	Jones	Disagree with replacing Maclay Bridge with new bridge at South; cost is exorbitant - old bridge can be rehabilitated at a much lower cost; check to see if monies could be used to rehabilitate the existing bridge; new bridge would change traffic patterns - not only on South but also in the Big Flat area; more traffic, more noise, more accidents, especially as South; South would be a straight shot which tempts people to drive faster; South has adjacent elementary school, high school, hospital, nursing home, turn-offs to the equestrian park, and proposed park on the south side - these are all zones which would increase in danger as there would be more traffic and speed; changes whole atmosphere of rural nature of Target Range; kids would jump off the new bridge; research percentage of deaths at Maclay Bridge per population using it and compare to other bridge/river accesses; savings from rehabilitating the bridge could be used to hire a lifeguard to prohibit the jumping from the bridge; new bridge vastly expensive; also expenses to widen South Avenue; affects schools and homeowners' property & property values.	Thank you for your comments. They are included in our study records.	Received after end of official comment period



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